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DEPARTMENT OF REGISTRATION AND EDUCATION

DIVISION OF THE
STATE GEOLOGICAL SURVEY
M. M. LEIGHTON, *Chief*

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Except as otherwise noted, all publications are obtainable upon application to the Chief, State Geological Survey, Urbana, Illinois. The price, which includes postage, of available publications is specified in their descriptions. **Small sums may be remitted in stamps. Checks and money orders should be made payable to M. M. Leighton, Chief, State Geological Survey, Urbana, Illinois.**

BULLETINS

***Bulletin 1.** The Geological Map of Illinois: by Stuart Weller. 1906.

Discusses briefly the lines of deformation and the geology and distribution of the rock formations of the State. 28 pages, 1 map on a scale of 12 miles to the inch. Supplanted by later bulletins and revised geologic map, listed on page 27.

*Bulletin 2. The Petroleum Industry of Southeastern Illinois: by W. S. Blatchley and others. 1906.

Includes brief discussions on history of oil development in Illinois, Pennsylvanian formations in southeastern Illinois, origin of petroleum, occurrence of Illinois petroleum, petroleum production in southeastern Illinois, systematic descriptions of oil fields in Clark, Cumberland, Crawford, Lawrence, Edgar, Coles, Jasper, Clay, Williamson and Montgomery counties, by W. S. Blatchley; geologic structure of the State, by Stuart Weller; quality and properties of Illinois petroleum and systematic descriptions of oil fields in Saline and Randolph counties by F. F. Grout; systematic description of the Pike County gas field, by T. E. Savage; and a list of bench marks, by E. M. Scheflow. 112 pages, 6 plates, 3 figures. This bulletin now is largely supplanted by more recent publications such as bulletins 22, 44C, and 54, Report of Investigations No. 7, and Illinois Petroleum Nos. 4, 12 and 14.

*Bulletin 3. Composition and Character of Illinois Coals: by S. W. Parr and others. 1906.

Discusses the composition and character of Illinois coals as revealed by analyses, the classification of coals and the method of analyses, and tabulates 150 analyses. Includes chapters on distribution of the coal beds of the State, by A. Bement, and on tests with Illinois coals under steam boilers, by L. P. Breckenridge, and a historical introduction, by H. F. Bain. 88 pages, 5 plates, 16 figures. See Mining Investigations Bulletin 27 for later analyses.

*Bulletin 4. Year Book: by H. Foster Bain and others. 1907.

Contents: Administrative report for 1906, by H. F. Bain; report of the cooperative topographic survey, by H. M. Wilson; preliminary investigation of Illinois fireclays, by R. C. Purdy and F. W. De Wolf; limestones available for fertilizers, by F. B. Van Horn; analyses of certain silica deposits in southern Illinois, by H. F. Bain; contributions to the study of coal, including—introduction by H. F. Bain—chemical analyses of certain coals, by S. W. Parr—determination of moisture lost on air drying, by F. F. Grout—moisture in air-dried samples, by W. F. Wheeler—anthracizing bituminous coals, by S. W. Parr—cannel coal in northern Illinois, by F. F. Grout—compression tests of Illinois coal, by A. N. Talbot—report on field work in the coal districts of the State, by David White, and the Delafield drill core, by Jon A. Udden; stratigraphic work in the vicinity of East St. Louis, by N. M. Fenneman; notes on the geology of southern Calhoun County, by Stuart Weller; water resources of the Springfield quadrangle, by T. E. Savage; the mineral industries in 1906, by H. F. Bain. 260 pages, 4 plates, 4 figures. See subsequent bulletins for further information on some of the foregoing topics.

*Bulletin 5. Water Resources of the East St. Louis District: by Isaiah Bowman, assisted by C. A. Reeds. 1907.

Discusses the geographic, topographic, geologic and hydrographic conditions that control the surficial and underground sources of supply of water for municipal and industrial purposes, and includes map and numerous well records and analyses. 128 pages, 4 plates, 11 figures.

*Bulletin 6. The Geological Map of Illinois: by Stuart Weller. Second edition. 1907.

A revised edition of Bulletin 1. 36 pages, 1 map on a scale of 12 miles to the inch. Supplanted by revised geologic map, listed on page 27.

Bulletin 7. Physical Geography of the Evanston-Waukegan Region: by Wallace W. Atwood and James Walter Goldthwait. 1908. Reprinted 1925.

Gives an explanation of geological processes and the geologic history of this area. Adapted for teachers, students, and nontechnical readers. 102 pages, 14 plates, 52 figures. Paper bound. Price, 50 cents.

*Bulletin 8. Year Book: by H. Foster Bain and others. 1907.

Contents: Administrative report for 1907, by H. F. Bain; abstracts of bulletins 5, 6, and 7; stream improvement and land reclamation in Illinois, by H. F. Bain; topographic mapping in bottom lands, by E. W. McCrary; drainage about Springfield, by J. C. Jones; bedrock near Wheaton, by A. C. Trowbridge; middle portion of Illinois Valley, by H. H. Barrows; the Salem limestone, by Stuart Weller; lower Paleozoic stratigraphy of southwestern Illinois, by T. E. Savage; notes on Shoal Creek limestone, by Jon A. Udden; cement-making materials in the vicinity of LaSalle, by G. H. Cady; statistics and directory of the clay industries of Illinois, by E. F. Lines; experiments on the amorphous silica of southern Illinois, by T. R. Ernest; contributions to the study of coal, including—introduction by H. F. Bain—initial coal substance having constant thermal value, by S. W. Parr and W. F. Wheeler—alterations of the composition of coal during ordinary laboratory storage, by S. W. Parr and W. F. Wheeler—artificial modification of the composition of coal, by S. W. Parr and C. K. Francis—weathering of coal, by S. W. Parr and N. D. Hamilton—ash in coal and its influence in the value of fuel,

*Edition exhausted. Consult public, technical, or university libraries.

by A. Bement—coal investigations in the Saline-Gallatin field, Illinois, and the adjoining areas, by F. W. DeWolf—coal investigations in Saline and Williamson counties, Illinois, by F. W. DeWolf—notes on the Belleville-Breese area, by J. A. Udden and F. W. DeWolf—defects in coal No. 5 at Peoria, by J. A. Udden, and report on field work done in 1907, by David White; petroleum fields of Illinois in 1907, by H. F. Bain; artesian wells in Peoria and vicinity, by J. A. Udden; Milbrig area of the lead and zinc district of northwestern Illinois, by U. S. Grant and M. J. Perdue; concrete materials produced in the Chicago district, by E. F. Burchard; the mineral industries of Illinois in 1907, by H. F. Bain. 391 pages, 23 plates, 32 figures, 1 map. See subsequent bulletins for further information on some of the foregoing topics.

Bulletin 9. Paving Brick and Paving-Brick Clays of Illinois: by C. W. Rolfe, A. N. Talbot, Ross C. Purdy, and Ira O. Baker. 1908.

Contents: Geology of clays, by C. W. Rolfe; geologic distribution of paving-brick materials in Illinois, by C. W. Rolfe; qualities of high-grade paving brick and tests used in determining them, by A. N. Talbot; qualities of clays suitable for making paving brick, by R. C. Purdy; pyrophysical and chemical properties of paving-brick clays, by R. C. Purdy; clays studied which are suitable for use in the manufacture of paving brick, by C. W. Rolfe; construction and care of brick pavements, by I. O. Baker. 318 pages, 3 plates, 33 figures. Price: paper bound, 75 cents; cloth bound, $1.00. See following notices of extracts.

Bulletin 9A. (Extract from Bulletin 9) Geology of Clays and Geological Distribution of Paving-Brick Materials in Illinois: by C. W. Rolfe. 1908.

46 pages, 1 plate. Paper bound. Price 25 cents.

Bulletin 9B. (Extract from Bulletin 9) Qualities of High-grade Paving Brick and Tests Used in Determining Them: by A. N. Talbot. 1908.

84 pages, 2 plates, 3 figures. Paper bound. Price, 25 cents.

Bulletin 9C. (Extract from Bulletin 9) Qualities of Clays Suitable for Making Paving Brick, and Pyrophysical and Chemical Properties of Paving-Brick Clays: by Ross C. Purdy. 1908.

145 pages, 30 figures. Paper bound. Price, 25 cents

Bulletin 9D. (Extract from Bulletin 9) Clays Studied which are Suitable for Use in the Manufacture of Paving Brick: by C. W. Rolfe. 1908.

9 pages. Paper bound. Price, 25 cents.

Bulletin 9E. (Extract from Bulletin 9) Construction and Care of Brick Pavements: by Ira O. Baker. 1908.

14 pages. Paper bound. Price, 25 cents.

Bulletin 10. Mineral Content of Illinois Waters: by Edward Bartow, J. A. Udden, S. W. Parr, and George Thomas Palmer. 1909.

Contents: Introduction, classification of waters according to physical and chemical properties, and methods and interpretations of analyses, by E. Bartow; geological classification of waters of Illinois, by J. A. Udden; medicinal springs of Illinois, by G. T. Palmer, M. D.; 548 tabulated analyses of waters from various localities in the State. 192 pages, 9 plates, 1 figure. Cloth bound. Price, 50 cents.

Bulletin 11. Physical Features of the DesPlaines Valley: by James Walter Goldthwait. 1909.

Discusses the geography and history of DesPlaines River; the character, history and structure of the bedrock; the surface of the bedrock; the glacial and interglacial deposits; the physiographic history of DesPlaines River; and floods on the river. Includes suggestions for field trips. Adapted for teachers, students, and nontechnical readers, 103 pages, 9 plates, 21 figures. Cloth bound. Price, 50 cents.

Bulletin 12. Physiography of the St. Louis area: by N. M. Fenneman. 1909.

Discusses the geology, geological history, geologic processes now operating, topography, drainage, and geography of the St. Louis and East St. Louis quadrangles. Adapted for teachers, students, and non-technical readers. Includes a topographic and geologic map engraved in several colors, on a scale of 1:62,500. 83 pages, 18 plates, 10 figures. Cloth bound. Price, 50 cents.

Bulletin 13. The Mississippi Valley between Savanna and Davenport: by J. Ernest Carman. 1909.

Describes concisely the topography and exposed bedrock formations but is devoted principally to a description of the glacial and eolian deposits in the area and to a discussion of the geologic principles and processes that they exemplify. Adapted for teachers, students and nontechnical readers. Includes two maps engraved in several colors to show topography and distribution of surficial deposits. 96 pages, 23 plates, 26 figures. Cloth bound. Price, 50 cents.

Bulletin 14. Year Book: by H. Foster Bain and others. 1909.

Contents: Administrative report for 1908, by H. F. Bain; report of the cooperative topographic survey of Illinois by W. H. Herron; studies of Illinois

coals, by H. F. Bain and others; coal deposits and possible oil field near Duquoin, Illinois, by Jon A. Udden; casts of foraminifera in the Carboniferous of Illinois, by R. B. Bagg, Jr.; natural gas in the glacial drift of Champaign County, by C. F. Knirk; artificial silicates with reference to amorphous silica, by W. S. Williams; paleobotanical work in Illinois in 1908, by David White; proceedings of the Illinois fuel conference. 394 pages, 5 plates, 5 figures. Cloth bound. Price, 50 cents. See following notice of extract.

Bulletin 14A. (Extract from Bulletin 14) Proceedings of the Illinois Fuel Conference, March 11-13, 1909.

89 pages. Paper bound. No charge.

Bulletin 15. Geography of the Middle Illinois Valley: by Harlan H. Barrows. 1910. Reprinted 1925.

Discusses the character and geologic history of the physiography, bedrock formations, glacial deposits, and postglacial changes and the history and geography of Illinois Valley between Marquette and Pekin. Adapted for teachers, students and nontechnical readers. 128 pages, 16 plates, 47 figures. Paper bound. Price, 50 cents.

***Bulletin 16.** Year Book: by Frank W. DeWolf and others. 1910.

Contents: Administrative report for 1909, by F. W. DeWolf; Elizabeth sheet of the lead and zinc district, by G. H. Cox; oil resources of Illinois, by R. S. Blatchley; studies of Illinois coal, including—introduction by F. W. DeWolf—the Illinois coal field, by A. Bement—the chemical composition of coal, by S. W. Parr—the geology and coal resources of the West Frankfort quadrangle, by G. H. Cady—the geology and coal resources of the Herrin quadrangle, by T. E. Savage—the geology and coal resources of the Murphysboro quadrangle, by E. W. Shaw—review of mine rescue work in Illinois, by R. Y. Williams—diamond drill core from Franklin County, by Jon A. Udden; faunal succession and correlation of pre-Devonian formations of southern Illinois, by T. E. Savage; the occurrence of structural materials in Illinois, by Jon A. Udden and J. E. Todd. 396 pages, 37 plates, 9 figures. See subsequent bulletins for further information on some of the foregoing topics. See following notice of extract.

Bulletin 16A. (Extract from Bulletin 16) The Illinois Coal Field: by A. Bement; The Chemical Composition of Illinois Coal: by S. W. Parr. 1914.

60 pages, 4 plates. Paper bound. Price, 25 cents.

Bulletin 17. Portland-Cement Resources of Illinois: by A. V. Bleininger, E. F. Lines, and F. E. Layman. 1912.

Contents: Illinois Portland-cement industry, raw materials for Portland cement, manufacture of Portland cement, and clay materials for Portland-cement manufacture in Illinois, by A. V. Bleininger; stratigraphy of Illinois with reference to Portland-cement materials and a compilation of descriptions of localities from which limestone samples were collected, by E. F. Lines; descriptions of clay deposits sampled, by F. E. Layman. 121 pages, 19 plates. Cloth bound. Price, 75 cents.

***Bulletin 18.** A Study of Sand-Lime Brick: by S. W. Parr and T. R. Ernest. 1912.

Discusses the historical development, the chemical and physical properties, the fire-resistant qualities, the raw materials, and the technique of manufacture of sand-lime brick. Includes a bibliography of 61 items. 83 pages, 6 plates, 4 figures.

Bulletin 19. Geology and Geography of the Wheaton Quadrangle: by Arthur C. Trowbridge. 1912.

Includes a brief description of the bedrock, but is devoted chiefly to a description and history of the glacial deposits and to discussions of their origin and of the geologic processes involved in postglacial changes. Adapted for teachers, students, and nontechnical readers. Includes a topographic and geologic map, engraved in several colors, on a scale of 1:62,500. 79 pages, 12 plates, 17 figures. Cloth bound. Price, 50 cents.

Bulletin 20. Year Book: by F. W. DeWolf and others. 1915.

Contents: Administrative report for 1910, by F. W. DeWolf; mineral production of Illinois in 1909 and 1910, by G. H. Cady; Carlyle oil field and surrounding territory, by E. W. Shaw; Carlinville oil and gas field, by F. H. Kay; geology and mineral resources of the Springfield quadrangle, by T. E. Savage; valuation of coal for gas manufacture, by S. W. Parr; extinct lakes in southern and western Illinois and adjacent states, by E. W. Shaw. 165 pages, 14 plates, 8 figures. Cloth bound. Price, $1.00. See following notice of extract.

Bulletin 20A. (Extract from Bulletin 20) The Carlyle Oil Field and Surrounding Territory: by E. W. Shaw, in cooperation with U. S. Geological Survey; The Carlinville Oil and Gas Field: by Fred H. Kay. 1912.

50 pages, 10 plates. Paper bound. Price, 75 cents.

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*Edition exhausted. Consult public, technical, or university libraries.

Bulletin 21. Lead and Zinc Deposits of Northwestern Illinois: by G. H. Cox. 1914.

Describes the topography of the region, the bedrock formations with especial attention to those bearing ore, the geologic structure, the ore and associated minerals, the occurrence of the ore, the mines and prospects, and discusses the history of mining and smelting, the genesis of the ore minerals, and the economic aspects. Includes a bibliography of 54 items and 4 topographic and geologic maps engraved in several colors, of which one is a map of the Galena and Elizabeth quadrangles on a scale of 1:96,000 and the other three on which structural contours are also shown are maps of local mine areas on a scale of 4 inches to the mile. 120 pages, 22 plates, 13 figures. Cloth bound. Price, $1.00.

Bulletin 22. The Oil Fields of Crawford and Lawrence Counties: by Raymond S. Blatchley. 1913.

Discusses the historical development of the field, the origin and accumulation of petroleum, the general geology of Illinois relating to oil and gas, the general stratigraphy of Crawford and of Lawrence counties, the features of the main fields, the detailed geology and structure of Crawford and of Lawrence counties, and the economic aspects of the local industry. Includes in the text 51 detailed well logs, derived either from drillers' records or studies of well cuttings; a 250-page appendix of well data tabulated according to counties and townships; and 8 maps in a separate case. 442 pages, 33 plates. Cloth bound. Price, $1.75.

Bulletin 23. Biennial Report: by F. W. DeWolf and others. 1917.

Contents: Administrative report for 1911 and 1912, by F. W. DeWolf; mineral production for Illinois in 1911 and 1912, by H. J. Skewes; oil and gas in Colchester and Macomb quadrangles, by H. Hinds; Plymouth oil field, by R. S. Blatchley; geology of LaSalle and Hennepin quadrangles, by G. H. Cady; stratigraphy and paleontology of the Alexandrian series in Illinois and Missouri, by T. E. Savage. 181 pages, 9 plates, 3 figures. Cloth bound. Price, 50 cents.

Bulletin 24. Some Deep Borings in Illinois: by J. A. Udden. 1914.

Consists of directions for collecting and examining samples of well cuttings, of criteria by which the various rock formations in Illinois may be identified, and of logs of 43 deep wells in Illinois of which samples of well cuttings were studied. Includes 3 plates of columnar representations of the well logs. 141 pages, 4 plates. Cloth bound. Price, 50 cents.

Bulletin 25. Report and Plans for Reclamation of Land Subject to Overflow in the Embarrass River Valley: by Jacob A. Harman. 1913.

Presents requisite data, a natural division into 26 drainage units, detailed plans for unified work, and estimated costs for reclaiming 170 square miles of bottom land along Embarrass River below Greenup and North Fork below Moriah. Includes 28 appended tables of data concerning rainfall and river stages or relating to the proposed plans. Also includes an outline map of the Embarrass River basin on a scale of 16 miles to an inch; an index map of the valley involved in the project on a scale of 2 miles to an inch, engraved in 3 colors to show the proposed drainage units; 5 maps of local areas with cross-sections, engraved in two colors on a scale of 1 mile to the inch; and 2 sheets of profiles. 61 pages, 9 maps and profiles. Cloth bound. Price, 75 cents.

Bulletin 26. Geology and Geography of the Galena and Elizabeth quadrangles: by Arthur C. Trowbridge, E. W. Shaw, and Bernard H. Schockel. In cooperation with U. S. Geological Survey. 1916.

Discusses fully the topography, the general geologic principles, the geology and geologic history of bedrock formations and glacial and eolian deposits, the work and results of ground-water and streams, the economic resources, and the history and geography of the area. A scientific treatise adapted for teachers, students and nontechnical readers. Includes a topographic map engraved in 3 colors and a geologic and structure map engraved in several colors, both on a scale of 1:62,500. 233 pages, 25 plates, 50 figures. Cloth bound. Price, 50 cents.

Bulletin 27. Geography of the Upper Illinois Valley and History of Development: by Carl O. Sauer. 1916.

Describes with especial attention to their geographic influence the physiography, the bedrock formations and their history, the bedrock surface, the glacial deposits and their history, the drainage during glacial time, the present physiographic processes and their results, and the history and industrial development of Illinois Valley above Hennepin. Adapted for teachers, students and nontechnical readers. 208 pages, 2 plates, 69 figures. Cloth bound. Price, 50 cents.

Bulletin 28. Oil and Gas in Bond, Macoupin, and Montgomery Counties: by Raymond S. Blatchley. 1914.

Consists of a historical review of the development of the field, a resume of the general geology of central and southern Illinois, and detailed discussion of the stratigraphy and structure of the rock formations in Bond, Macoupin, and Montgomery counties. Includes detailed logs and columnar representations of 11 wells, a structural map of the area on a scale of 5 miles to the inch, a cross-section of the Greenville field, and 2 tables of well data. 51 pages, 4 plates, 1 figure. Price: paper bound, 50 cents; cloth bound, 75 cents.

***Bulletin 29.** Purchase and Sale of Illinois Coal under Specifications: by S. W. Parr. 1914.

Outlines the principles, methods, and directions for sampling coal and discusses the effects of chemical and physical properties on commercial valuation of coal. Includes a large number of analyses and tabulates them according to counties and districts. 80 pages, 1 plate, 10 figures.

Bulletin 30. Biennial Report: by F. W. DeWolf and others. 1917.

Contents: Administrative report for 1913 and 1914, by F. W. DeWolf; mineral production of Illinois in 1913 and 1914, by H. J. Skewes; coal in Gillespie and Mt. Olive quadrangles, by W. Lee; Pennsylvanian fireclays of Illinois, by E. H. Lines; geology and economic resources of Colchester and Macomb quadrangles, by H. Hinds; loess in the Canton quadrangle, by T. E. Savage; dictionary of altitudes. 161 pages, 3 plates, 8 figures. Cloth bound. Price, 50 cents.

***Bulletin 31.** Oil Investigations in Illinois: by Fred H. Kay and others. In cooperation with U. S. Geological Survey. 1915.

Contents: Area south of the Colmar oil field, by W. C. Morse and F. H. Kay; the Colmar oil field, a restudy, by W. C. Morse and F. H. Kay; Allendale oil field, by J. L. Rich; anticlinal structure in Randolph County, by S. Weller; and oil and gas in the Gillespie and Mt. Olive quadrangles, by W. Lee. 111 pages, 10 plates, 20 figures. See subsequent bulletins for later information on some of the foregoing topics.

Bulletin 32. Report and Plans for Reclamation of Land Subject to Overflow in the Spoon River Valley: by Jacob A. Harman. 1916.

Presents requisite data, a division into 6 drainage units, detailed plans for unified work, and estimated costs for reclaiming 16,105 acres of bottom land along Spoon River below London Mills. Includes 25 tables of data concerning rainfall and river stages or relating to the proposed plans. Also includes a map of the Spoon River basin; 3 maps of portions of the valley to be reclaimed; and 2 sheets of profiles. 57 pages, 6 maps and profiles. Cloth bound. Price, 75 cents.

Bulletin 33. Year Book: by F. W. DeWolf and others. 1916.

Contents: Administrative report for fiscal year ending June 30, 1916, by F. W. DeWolf; mineral resources of Illinois in 1915, by H. J. Skewes; petroleum in Illinois in 1914 and 1915, by F. H. Kay; geologic structure of Canton and Avon quadrangles, by T. E. Savage; notes on Bremen anticline, Randolph County, by F. H. Kay; oil and gas in the Birds quadrangle, by J. L. Rich; oil and gas in the Vincennes quadrangle, by J. L. Rich. 180 pages, 10 plates, 14 figures. Cloth bound. Price, $1.00. See following notice of extract.

Bulletin 33A. (Extract from Bulletin 33.) Notes on Bremen Anticline: by Fred H. Kay. 1916.

4 pages, 1 figure. Paper bound. Price, 25 cents.

Bulletin 34. Artesian Waters of Northeastern Illinois: by Carl B. Anderson. 1919.

Discusses the sources, the geologic reservoirs, the principles and factors involved in the movement, the chemical character, and the temperature of groundwater and the engineering and economic considerations relating to wells, and describes the physiography, the geology, the underground waters, and the municipal water supplies in Boone, Cook, DeKalb, DuPage, Grundy, Kane, Kankakee, Kendall, Lake, LaSalle, McHenry, Will and Winnebago counties. Includes logs of 48 wells and appended tables of 78 mineral analyses and 279 boiler analyses of water samples. 326 pages, 4 plates, 3 figures. Cloth bound. Price, $1.00.

Bulletin 35. Oil Investigations in Illinois: by Fred H. Kay, Albert D. Brokaw, Stuart St. Clair, and Charles Butts. 1917.

Contents. Petroleum in Illinois in 1916, by F. H. Kay; parts of Saline, Johnson, Pope, and Williamson counties, by A. D. Brokaw; parts of Williamson, Union, and Jackson counties, by S. St. Clair; oil possibilities of Ava area, by S. St. Clair; oil possibilities of Centralia area, by S. St. Clair; parts of Hardin, Pope, and Saline counties, by C. Butts. Includes corresponding structure maps, columnar sections, and cross-sections. 80 pages, 9 plates, 12 figures. Cloth bound. Price, 75 cents. See following notice of extract.

Bulletin 35A. (Extract from Bulletin 35) Preliminary Oil Report on Southern Illinois: by Albert D. Brokaw. 1916.

Consists of excerpts from "Parts of Saline, Johnson, Pope, and Williamson counties." 13 pages, 3 plates, 2 figures. Paper bound. Price, 25 cents.

Bulletin 36. Year Book: by F. W. DeWolf and others. 1920.

Contents: Administrative report for the fiscal year ending June 30, 1917, by F. W. DeWolf; mineral production of Illinois in 1916, by N. O. Barrett; clay deposits near Mountain Glen, Union County, Illinois, by S. St. Clair; structure of the LaSalle anticline, by G. H. Cady. 188 pages, 9 plates, 16 figures. Cloth bound. Price, 75 cents.

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*Edition exhausted. Consult public, technical, or university libraries.

Bulletin 37. Geology and Mineral Resources of the Hennepin and LaSalle Quadrangles: by G. H. Cady. 1919.

Discusses the topography, stratigraphy, geological history, and mineral resources of the area, giving special attention to the Pennsylvanian carboniferous formations. Includes two maps engraved in several colors on a scale of 1:62,500, one map shows topography and surficial geology, the other shows topography, areal and structural geology, and economic features. 136 pages, 6 plates, 36 figures. Cloth bound. Price, 50 cents.

Bulletin 38. Year Book: by F. W. DeWolf and others. 1922.

Contents: Administrative report for the fiscal two-year period ending June 30, 1919, by F. W. DeWolf; mineral resources of Illinois in 1917 and 1918, by N. O. Barrett; geology and mineral resources of the Edgington and Milan quadrangles, by T. E. Savage and J. A. Udden; geology and mineral resources of the Avon and Canton quadrangles, by T. E. Savage; further investigations of Illinois fireclays, by C. W. Parmelee and C. R. Schroyer; optical fluorite in southern Illinois, by J. E. Pogue; the Illinois pyrite inventory of 1918, by G. H. Cady; low-sulphur coal in Illinois, by G. H. Cady; notes on potash possibilities in Illinois, by C. R. Schroyer; notes on Illinois bituminous shales, including results of their experimental distillation, compiled by N. O. Barrett. Includes two topographic and surficial geology maps to accompany the respective quadrangle reports. 474 pages. 3 plates, 62 figures. Cloth bound. Price, $1.50. See following notices of extracts.

Bulletin 38A. (Extract from Bulletin 38) Optical Fluorite in Southern Illinois: by Joseph Pogue. 1918.

Discusses nontechnically the properties, uses, and value of optical fluorite and its occurrences in southern Illinois. 8 pages, 1 figure. Price, 25 cents.

Bulletin 38B. (Extract from Bulletin 38) Geology and Mineral Resources of the Avon and Canton Quadrangles: by T. E. Savage. 1921.

Describes the stratigraphy and structure and discusses the mineral resources of the area, giving principal attention to the Pennsylvanian carboniferous formations. Includes a topographic, surficial geology, and structural map engraved in several colors, on a scale of 1:62,500. 68 pages, 1 plate, 10 figures. Paper bound. Price, 50 cents.

Bulletin 38C. (Extract from Bulletin 38) Geology and Mineral Resources of the Milan and Edgington Quadrangles: by T. E. Savage and J. A. Udden. 1921.

Describes the physiography, stratigraphy, and structure and discusses the geological history and the mineral resources of the Illinois portion of the Milan, Edgington, and Davenport quadrangles. Includes a topographic and surficial geology map engraved in several colors, on a scale of 1:62,500. 96 pages, 1 plate, 20 figures. Paper bound. Price, 50 cents.

Bulletin 38D. (Extract from Bulletin 38) Further Investigations of Illinois Fireclays: by C. W. Parmelee and C. R. Schroyer. 1921.

Discusses the classification, uses, conservation, physical properties, and methods of testing clays in general, the geologic and geographic distribution of fireclays in Illinois, and the general geology of the "embayment" clays—Cretaceous, Tertiary, and Quarternary in age, and describes the deposits and tabulates the results of tests on samples of the embayment and the Pennsylvanian fireclays according to counties. 149 pages, 14 figures. Paper bound. Price, 75 cents.

Bulletin 38E. (Extract from Bulletin 38) Mineral Resources of Illinois: by N. O. Barrett. 1922.

Gives a historical resume of the development of the mineral resources of the State and a tabulation of the mineral production in 1917 and in 1918. 87 pages, 12 figures. Paper bound. Price, 50 cents.

Bulletin 38F. (Extract from Bulletin 38) Notes on Illinois Bituminous Shales, Including Results of their Experimental Distillation: compiled by N. O. Barrett. 1922.

Describes according to counties the sources and the results of tests on samples of bituminous shales that are possible sources of oil and gas by distillation. 19 pages, 4 figures. Paper bound. Price, 25 cents.

Bulletin 39. The Environment of Camp Grant: by Rollin D. Salisbury and Harlan H. Barrows. 1918.

Discusses the physical features, their military significance, the geological history, and the history and geography of the region about Camp Grant, (Rockford). Intended primarily for men in training at Camp Grant, but well adapted for teachers, students, and nontechnical readers. Includes topographic maps of the Rockford, Belvidere, Kings, and Kirkland quadrangles, engraved in 4 colors on a scale of 62,500, a sketch map of Camp Grant and vicinity, and a shaded relief map of the Pecatonica River flats. 75 pages, 2 plates, 25 figures, 4 maps. Paper bound. Price, 50 cents.

Bulletin 40. Oil Investigations in Illinois: by M. L. Nebel and others. 1919.

Contents: Petroleum in Illinois in 1917 and 1918, by N. O. Barrett; Brown

County, by M. L. Nebel; Good Hope and LaHarpe quadrangles, by M. L. Nebel; parts of Pike and Adams counties, by H. N. Coryell; experiments in water control in the Flat Rock pool, Crawford County (in cooperation with the U. S. Bureau of Mines), by F. H. Tough, S. H. Williston, and T. E. Savage. 144 pages, 12 plates, 35 figures. Price: paper bound, 75 cents; cloth bound, $1.00.

*Bulletin 41. Geology of Hardin County and the Adjoining Part of Pope County: by Stuart Weller, with the collaboration of Charles Butts, L. W. Currier, R. D. Salisbury, and others. In cooperation with the U. S. Geological Survey. 1920.

Gives an extended discussion of general geologic principles and of the physiography, the structure, the stratigraphy, the economic resources, and the paleontology of the region, with detailed treatment accorded the stratigraphy and paleontology of the Mississippian formations, especially the Chester series, and the fluorspar industry. Includes a topographic map of the region, engraved in four colors, on a scale of 1:62,500; a combined topographic, geologic, structural, and economic map of the region engraved in several colors, on a scale of 1:62,500; and an outline map of a part of the region in which the structures are most favorable for petroleum. 416 pages, 17 plates, 30 figures, 1 map. See following notice of extract.

Bulletin 41A. (Extract from Bulletin 41) Parts I, II, IV, and V of the Geology of Hardin County and the Adjoining Part of Pope County: by Stuart Weller, with the collaboration of Charles Butts, L. W. Currier, R. D. Salisbury, and others. In cooperation with the U. S. Geological Survey. 1920.

This extract contains all of Bulletin 41 except the stratigraphic and paleontological discussions. It is designed to meet the requirements of those who are interested primarily in the economic resources, especially the fluospar industry. It includes the same geologic and structural maps which the complete bulletin does. 146 pages, 3 plates, 20 figures. Paper bound. Price, $1.00

*Bulletin 42. Engineering and Legal Aspects of Land Drainage in Illinois: by G. W. Pickels and F. B. Leonard, Jr. 1921.

Consists of four parts: Status of drainage, September, 1920, by G. W. Pickels; engineering problems, by G. W. Pickels; legal problems, by F. B. Leonard, Jr, State aid, by G. W. Pickels. Part I summarizes the status of drainage in the entire state and in each of the 28 principal river basins; part II discusses channel improvement and the factors and effects involved, levees, diversion ditches, and pumping plants; part III summarizes the law of natural drainage, discusses the provisions of existing drainage statutes and their defects, suggests legislative improvements, and includes a reprint of the revised levee act; part IV discusses the need of various kinds of assistance. Includes a map of Illinois, scale 8 miles to the inch, engraved in colors to show drainage districts and undrained lands. 322 pages, 1 map. Paper bound. (See following notice of extract.)

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*Bulletin 42A. (Extract from Bulletin 42) A Preliminary Report of the Drainage Situation: Status of Drainage, September, 1920, by G. W. Pickels; The Drainage Laws of Illinois, by F. B. Leonard, Jr. 1921.

Excerpts from the first portions of parts I and III of Bulletin 42 comprise this extract, which consists of a summary of the status of drainage in the entire State, September, 1920, and a discussion of the natural law of drainage and the existing statutes, their defects, and suggested improvements. Includes the same drainage map that the complete bulletin does. 67 pages, 1 map. Paper bound.

Bulletin 43. Economic and Geologic Papers: by T. E. Savage and M. L. Nebel, H. E. Culver, J. Harlen Bretz, and L. W. Currier. 1923.

Contents: geology and mineral resources of the La Harpe and Good Hope quadrangles, by T. E Savage and M. L. Nebel; geology and mineral resources of the Morris quadrangle, by H. E. Culver; geology and mineral resources of the Kings quadrangle, by J. Harlen Bretz; geology of northeastern Adams County, by L. W. Currier. Includes geologic maps of the respective quadrangles. 338 pages, 8 plates, 81 figures. Cloth bound. Price, $1.50. See following notices of extracts.

Bulletin 43A. (Extract from Bulletin 43) Geology and Mineral Resources of the LaHarpe and Good Hope Quadrangles: by T. E. Savage and M. L. Nebel. 1921.

Discusses the physiography, the stratigraphy, the structure, the geologic history, and the economic resources of the area. Includes a surficial geology, structural, and economic map engraved in several colors on a topographic base on a scale of 1:62,500. 89 pages, 1 plate, 11 figures. Paper bound. Price, 50 cents.

Bulletin 43B. (Extract from Bulletin 43) Geology and Mineral Resources of the Morris Quadrangle: by H. E. Culver. 1922.

Describes the physiography and the stratigraphy and discusses the structure, the geological history, and the economic resources of the area. Includes a sur-

*Edition exhausted. Consult public, technical, or university libraries.

ficial geology map and an areal geology, structural, and economic map, both engraved in several colors on a topographic base on a scale of 1:62,500. 109 pages, 3 plates, 31 figures. Paper bound. Price, 50 cents.

Bulletin 43C. (Extract from Bulletin 43) Geology and Mineral Resources of the Kings Quadrangle: by J. Harlen Bretz. 1923.

Describes the stratigraphy and discusses general geologic processes, the geological history, and the economic resources of the area. Includes a surficial geology map engraved in several colors on a topographic base on a scale of 1:62,500. 99 pages, 3 plates, 28 figures. Paper bound. Price 50 cents.

Bulletin 43D. (Extract from Bulletin 43) Geology of Northeastern Adams County: by Louis W. Currier. 1922.

Describes the general stratigraphy and discusses the oil and gas possibilities in the region. 22 pages, 2 plates, 4 figures. Paper bound. Price, 75 cents.

†**Bulletin 44A.** A Restudy of the Staunton Gas Pool: by L. A. Mylius. 1919.

A brief discussion of the history of petroleum development, the geology, the structure, the production, and recommendations for drilling in the locality. Includes an outline map and a red oversheet, both showing structures, on a scale of 3 inches to the mile. 23 pages, 3 plates, 1 figure. Paper bound. Price, 50 cents.

†**Bulletin 44B.** Oil and Gas Development in the Vicinity of Jacksonville: by D. M. Collingwood. 1923.

Discusses the history of petroleum development, the geology, the structure, and possibilities for future production in the locality. Includes 4 detailed logs of wells. 30 pages, 3 figures. Paper bound. Price, 50 cents.

†**Bulletin 44C.** Oil and Gas Development and Possibilities in Parts of Eastern Illinois: by L. A. Mylius. 1923.

An abstract of Bulletin 54 that briefly summarizes the stratigraphy with tabulated thicknesses of formations, the producing sands with tabulated data, the general structure with 5 diagrammatic cross-sections, and well data, and submits directions for future prospecting in the region. Includes an outline map on a scale of 4 miles to the inch, engraved in two colors, and showing the producing oil fields, favorable structures, and important wells. 64 pages, 7 plates, 3 figures. Paper bound. Price, 75 cents.

Bulletin 45. Structural Reconnaissance of the Mississippi Valley Area from Old Monroe, Missouri, to Nauvoo, Illinois: by Frank Krey. In cooperation with Missouri Bureau of Geology and Mines. 1924.

Describes the pre-Pennsylvanian formations and major structures and discusses the periods of deformation and the oil possibilities in the region. Includes correlated logs of 19 deep wells, 5 skeletonized profile sections, numerous generalized cross-sections, structure maps engraved in two colors on a scale of 5 miles to the inch, and a tabulated index of elevations at localities indicated on the map. 86 pages, 18 plates. Paper bound. Price, 75 cents.

Bulletin 46. Limestone Resources of Illinois: by Frank Krey and J. E. Lamar. 1925.

Discusses the methods of sampling and testing limestone and the value of the tests in relation to requirements for highway materials, the general quarry practices, and the requirements or specifications for 21 major uses of limestone and dolomite. Describes according to counties the rock in quarries and at possible quarry sites and the methods of production at individual quarries. Includes comprehensive tables showing the geologic and geographic distribution of limestone, the location of quarries and possible quarry sites, results of physical tests and chemical analyses of samples, and physical properties of building stone in the State. Prepared for those who are interested in the economic development of limestone. 392 pages, 70 figures. Paper bound. Price, $1.25.

Bulletin 47. Geology and Mineral Resources of the Equality-Shawneetown Area: by Charles Butts. In cooperation with the U. S. Geological Survey. 1925.

Describes the stratigraphy and structure and discusses the mineral resources of those portions of the Equality and Shawneetown quadrangles that lie in Saline and Gallatin counties. Includes a topographic map engraved in four colors on a scale of 1:62,500 and a geologic and structure map engraved in several colors on the topographic base. 76 pages, 3 plates, 6 figures. Paper bound. Price, 50 cents.

Bulletin 48. Geology and Mineral Resources of the Carbondale Quadrangle: by J. E. Lamar. 1925.

Describes and discusses the physiography, the geography, the stratigraphy (especially the Chester series and the Pennsylvanian formations), the structure, the geologic history, and the mineral resources of the area. Includes a topo-

† Bulletin 44 has been published only in separates as listed.

graphic map engraved in three colors on a scale of 1:62,500, a geologic map engraved in several colors on the topographic base, and a structure map on a scale of about 2 miles to the inch. 172 pages, 5 plates, 28 figures. Paper bound. Price, 50 cents.

Bulletin 49. Geology and Mineral Resources of the Dixon Quadrangle: by Russell Stafford Knappen. 1926.

NEW

Describes and discusses comprehensively the physiography, geologic principles, stratigraphy, geologic history, structure, and mineral resources of the quadrangle. A scientific treatise adapted for teachers, students, and nontechnical readers. Includes a topographic map engraved in three colors on a scale of 1:62,500 and a geologic map engraved in several colors on the topographic base. 141 pages, 5 plates, 20 figures. Paper bound. Price, 50 cents.

Bulletin 50. Molding Sand Resources of Illinois: by M. S. Littlefield. 1925.

Discusses the physical properties and tests, the origin and geology, the production methods, and the classification of molding sands, describes for each county of the State the general desposits, individual pits, and the location and character of deposits from which samples were taken, and tabulates the results of tests. Prepared for those who are interested in the economic development of molding sand. 183 pages, 50 figures. Paper bound. Price, $1.00.

Bulletin 51. The Geology and Mineral Resources of the Joliet Quadrangle: by D. J. Fisher. 1925.

Describes and discusses the physiography, the bedrock formations and their geologic history, the development of the bedrock surface, the glacial deposits and their geologic history, postglacial deposits and their geologic history, and the economic resources of the area. Includes tabulated logs and data of 345 wells, of which 18 are deep wells, a topographic map engraved in three colors on a scale of 1:62,500 on which are also shown the topography of the bedrock surface and the location of the wells, and a surficial geology and economic map engraved in several colors on the topographic base. A scientific treatise adapted for teachers, students, and nontechnical readers. 160 pages, 6 plates, 47 figures. Paper bound. Price, 50 cents.

Bulletin 52. Pennsylvanian Flora of Northern Illinois: by A. C. Noé. 1925.

Contains 45 plates illustrating typical specimens of fossilized plants found in the Pennsylvanian formations and a brief synopsis of the classification of the plants. 113 pages, 45 plates. Paper bound. Price, 50 cents.

Bulletin 53. Geology and Economic Resources of the St. Peter Sandstone in Illinois: by J. E. Lamar. 1928.

NEW

Describes and discusses in general the distribution, lithology, thickness, structure, origin, and geologic history of St. Peter sandstone in the State; describes in detail and discusses its structural, physical, and compositional features, giving special attention to the impurities; describes production methods in general; describes the situation and production methods of industrial quarries; lists and specifies the requirements for more than 100 uses of sand; describes the methods of sampling and testing and tabulates the results of these tests on samples of St. Peter sandstone in Illinois; and discusses briefly undeveloped deposits of possible commercial value. A comprehensive presentation of data, prepared for those who are interested in the economic development of sandstone. 175 pages, 3 plates, 43 figures. Paper bound. Price, $1.00.

Bulletin 54. Oil and Gas Development and Possibilities in East Central Illinois (Clark, Coles, Douglas, Edgar, and Parts of Adjoining Counties): by L. A. Mylius. 1927.

NEW

Summarizes production methods, general geology, structure, and geologic history and productive horizons; describes and discusses in detail the stratigraphy and geologic history; discusses the use of well logs, cuttings, and cores in interpretation of underground conditions and structure; discusses methods of operation especially concerned with counteracting water and with better recovery; describes for each important pool the occurrence of the productive sands, the structure, the methods of drilling and operation, and the production; and discusses the conditions and structures in localities favorable for future prospecting in Clark, Coles, Douglas, Edgar, and parts of adjoining counties. The text volume includes a large number of tabulations of important data and numerous cross-sections, structure sections, and stratigraphic sections of the important pools. A key map of the area showing sub-areas, pools, drill holes for which logs are available, cross-section lines, and structure; 9 structure-contour maps showing location of drill holes; a diagrammatic correlation of the productive horizons; a columnar section; a map showing geographic conditions during the Pennsylvanian period; and tabulated well data are contained in a separate case. 205 pages, 33 plates, 13 figures; 101 pages of tabulated well data, separately bound. Paper bound. Price, $1.50.

Bulletin 55. Geology and Mineral Resources of the Herscher Quadrangle: by L. F. Athy. 1928.

NEW

Describes and discusses the physiography, stratigraphy, geological history, structure, and economic resources of the area. A scientific treatise adapted for teachers, students, and nontechnical readers. 120 pages, 2 plates, 38 figures. Price, 50 cents.

Bulletin 56. Illinois Coal: A Nontechnical Account of Its Occurrence, Production, and Preparation, by A. Bement. 1929.

NEW

Presents a nontechnical discussion of the general features of the Illinois coal field, briefly describes the rock formations and geologic structure, gives estimates of Illinois coal resources and their future, describes coal mining practices and the preparation of coal; presents statistics on State production, arranged by county, and describes briefly the mining conditions in each of the ten principal mining districts; interprets the analyses of coal, and presents tabulated coal analyses, arranged by county and by district. Adapted for the general public and students. 110 pages, 50 figures. Paper bound. Price, 25 cents.

[This space may be used for noting additional bulletins as they appear.]

REPORTS OF INVESTIGATIONS

In order to obviate the necessity of awaiting the preparation of more detailed reports the following Reports of Investigations have been published giving summaries of the more important findings. Although some of them refer to local or limited areas, all of them contain some data of general interest.

Report of Investigations No. 1. Further Consideration of Prospects for Oil in the Decatur Area: by D. M. Collingwood. 1924.

Briefly describes the general geological section, the regional structure, the stratigraphy of the Pennsylvanian system, possible productive horizons, and localities where structure is favorable for future prospecting. Includes detailed logs of 33 wells. 44 pages, 1 plate, 1 figure. Paper bound. Price, 50 cents.

Report of Investigations No. 2. Structure of Parts of Northeastern Williamson and Western Saline Counties: by Gilbert H. Cady. In cooperation with the U. S. Geological Survey. 1924.

Briefly describes the geology and structure of the area as affecting the coal deposits in parts of the Galatia and West Frankfort quadrangles. Includes a topographic map on a scale of 1:24,000 on which are shown outcrops of Pennsylvanian formations, structure contours, and locations of drill holes and mines, an outline map showing locations of drill holes, a graphic stratigraphic section, and a table of level data for the drill holes. 20 pages, 3 plates, 2 figures. Paper bound. Price, 25 cents.

***Report of Investigations No. 3.** Preliminary Report of an Investigation of the Molding Sand Resources of Illinois: by M. S. Littlefield. 1925.

Describes the tests and the localities in each county from which samples of molding sand deposits were taken, and tabulates the results of the tests. 37 pages. Bulletin 50 constitutes the complete report on this study.

Report of Investigations No. 4. Carbon Ratios and Petroleum in Illinois: by Gail F. Moulton. 1925.

Discusses the carbon ratios of coal and the interrelation of the character of coal, the structures, and the oil fields of the State, with conclusions concerning oil possibilities. 18 pages, 5 figures. Paper bound. Price, 25 cents.

Report of Investigations No. 5. Structure of Herrin (No. 6) Coal Seam near Duquoin: by D. J. Fisher. 1925.

Briefly describes and discusses the origin and geological history of the Herrin coal, the strata below and above it, its distribution, its internal structural features, and its geologic structures, particularly the faults in the vicinity of Duquoin. Includes a map on a scale of 1 inch to a mile on which are shown the distribution of the coal, mines, structures, and faults, and a map of the structure and faults in the Kathleen mine. 34 pages, 2 plates, 15 figures. Paper bound. Price, 50 cents.

Report of Investigations No. 6. Proper Testing for Oil Structures in Illinois and Some Areas Deserving Such Testing: by Gail F. Moulton. 1925.

Discusses the advisability of test-drilling and describes some areas believed to be worthy of testing. 22 pages, 9 figures. Paper bound. Price, 50 cents.

Report of Investigations No. 7. Further Contributions to the Geology of the Allendale Oil Field, with a Revised Structure Map: by Gail F. Moulton. 1925.

Describes the general geology of the Pennsylvanian and Mississippian formations, the productive horizons, the geologic structure, the conditions relating to oil accumulation, and localities favorable for future prospecting in the area. Includes tabulated and graphic results of analyses of water samples from 30 wells, a structure contour map, and several graphic stratigraphic correlations. 27 pages, 4 plates, 12 figures. Paper bound. Price, 75 cents.

Report of Investigations No. 8. Preliminary Report on the Economic Mineral Resources of Calhoun County: by J. E. Lamar. 1926.

Summarizes briefly the geography, topography, stratigraphy, and structure and discusses the mineral resources, especially limestone, clay, and coal, of the county. 21 pages, 3 figures. Paper bound. Price, 50 cents.

Report of Investigations No. 9. The Glenwood Beds as a Horizon Marker at the Base of the Platteville Formation: by Arthur C. Bevan. 1926.

Describes the general character and stratigraphic relations and the distribution, character, and stratigraphic relations in Illinois, especially in the Oregon basin, and discusses the geological history of the Glenwood beds. 13 pages, 3 figures. Paper bound. Price, 25 cents.

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*Edition exhausted. Consult public, technical, or university libraries.

*Report of Investigations No. 10. The Oolite of the Ste. Genevieve Formation: by J. E. Lamar. 1926. (Reprinted from Transactions of Illinois State Academy of Science, Vol. 18, 1925.)

Discusses the origin of oolites, describes the occurrence, types, and nuclear grains of oolites in the Ste. Genevieve formation, and suggests the conditions under which they formed. 12 pages, 3 figures. Paper bound.

Report of Investigations No. 11. Pleistocene Studies: (1) A Notable Type Pleistocene Section: The Farm Creek Exposure near Peoria, Illinois: by Morris M. Leighton. 1926. (2) Pre-Illinoian Till in Southern Illinois: by Paul MacClintock. 1926. (Both reprinted from Journal of Geology, Vol. 34, No. 2, March-April, 1926.)

Each paper describes in detail and presents interpretations of a typical stratigraphic section of glacial deposits separated by buried soil zones. 15 pages, 5 figures. Paper bound. No charge.

Report of Investigations No. 12. Limestone for Sewage Filter Beds—Causes of Disintegration, Desirable Properties, and Methods of Testing: by J. E. Lamar. 1927.

NEW

Discusses the mechanical and chemical processes of disintegration, lists desirable properties, and describes tests and discusses their application as related to limestone used in sewage filters. 21 pages, 5 figures. Paper bound. Price, 25 cents.

Report of Investigations No. 13. Stratigraphy and Geologic Structure of Northern Illinois, with Special Reference to Underground Water Supplies: by F. T. Thwaites. 1927.

NEW

Discusses the general character and major geologic structure of the bedrock formations in northern Illinois and discusses their value as sources of potable water, their reaction to drilling, the quality of the water, the methods of testing it, the possibilities of contamination, the construction of wells, the future supply, and the value of logs. The report is also valuable because it presents descriptions and the latest correlation of the Cambrian formations. Includes a structure map, a stratigraphic cross-section, a table of level data, and numerous complete or partial well logs. 49 pages, 2 plates, 2 figures. Price, 50 cents.

Report of Investigations No. 14. Present Status of Correlation of Illinois Coals: by Harold E. Culver. 1927.

NEW

Discusses briefly the generally accepted correlation, points out some of its apparent discrepancies, suggests some revisions in correlation, and presents some generalizations regarding the stratigraphy and sedimentary conditions of the Pennsylvanian formation in Illinois. 13 pages. Paper bound. Price, 25 cents.

Report of Investigations No. 15. Preliminary Report on the Fullers Earth Deposits of Pulaski County: by J. E. Lamar. 1928.

NEW

Describes briefly the general stratigraphy of the south end of Illinois; the lithology, thickness, and distribution of the Porters Creek formation in which the fullers earth occurs; the physical properties, value, and uses of fullers earth; the occurrence and production methods employed in the deposit now utilized; the geology, lithology, extent, and overburden and the suggested methods of prospecting, testing, and mining three potential deposits; and the tests applied to samples of fullers earth and tabulates the results of the tests. 31 pages, 8 figures. Paper bound. Price, 50 cents.

Report of Investigations No. 16. The Oil and Gas Resources of the Ava-Campbell Hill Area: by Towner B. Root. 1928.

NEW

Describes the general stratigraphy and geologic structure of the area, the conditions in each of the producing pools, and the results of tests outside of the pools and discusses the possibilities of oil in deeper strata on proved structures and in minor structures. Includes two structure-contour maps and a graphic columnar section. 27 pages, 3 plates, 4 figures. Paper bound. Price, 50 cents.

Report of Investigations No. 17. The Limestone Resources of the Pontiac-Fairbury region: by J. E. Lamar. 1928.

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Describes briefly the general geography and geology of the Pontiac-Fairbury region in Livingston County, describes the Pontiac limestone, tabulates results of chemical analyses and physical tests on samples of the limestone, describes its known distribution and recommends testing for areal extent, and discusses its suitability for eight commercial uses. 27 pages, 7 figures. Price, 50 cents.

* Edition exhausted. Consult public, technical, or university libraries.

[This space may be used for noting additional Reports of Investigations as they appear.]

PRESS BULLETINS

Press bulletins are issued to make immediately available brief reports of findings in connection with oil and gas investigations. The data in some of them have been or will be incorporated in more complete bulletins. The new series, Illinois Petroleum, was started in April, 1926.

*Oil and Gas Prospecting in Parts of Clark, Coles, Edgar, Douglas, Vermilion, and Champaign Counties. 1919. Preliminary announcement. 2 pages.

*Oil and Gas Prospecting in Parts of Clark, Coles, Edgar, Douglas, and Champaign Counties. December, 1919. 4 pages.

*Oil and Gas Prospecting in Parts of Clark, Coles, Edgar, and Douglas Counties. May 17, 1920. 1 page, mimeographed.

*Oil and Gas Prospecting in Parts of Clark, Coles, Edgar, Douglas, Vermilion, and Champaign Counties: by L. A. Mylius. July 10, 1920.

Discusses possibility of testing the "Trenton" horizon. 8 pages.

*Oil and Gas Prospecting outside Southeastern Illinois: by L. A. Mylius. July 10, 1920. 1 page.

Geology and Oil and Gas Possibilities in the Vicinity of Waterloo, Monroe County, Illinois. 1920. 4 pages. Price, 25 cents.

Oil and Gas in Monroe County: by L. A. Mylius. February 10, 1921.

Describes production on Waterloo dome and discusses possibilities of other structures. 2 pages. Price, 25 cents.

*Oil Prospects in the "Trenton" of Western Illinois: by L. A. Mylius. March 12, 1921. 2 pages.

Oil Possibilities of the Posten School Structure, Monroe County, Illinois: by L. A. Mylius. November 19, 1921. 6 pages. Price, 25 cents.

*Notes on Prospects in the Decatur Area: by D. M. Collingwood. March 13, 1922.

Describes briefly the geology, structure, and productive horizons. Includes detailed logs of 13 deep wells. 12 pages.

*Notes on the Waterloo Anticline: by J. E. Lamar. 1922. (Reprinted from Transactions of the Illinois State Academy of Science, vol. XV, 1922.)

Describes the structure, the stratigraphy, the productive areas, the wells, the source of the oil, and the oil. 8 pages.

Extension of Allendale Oil Field: by D. M. Collingwood. May 17, 1924.

Describes the structural relations of the field and the stratigraphic position, the character, and the origin of the productive sand and discusses prospects for further development. 8 pages. See also Illinois Petroleum No 12.

Illinois Petroleum No. 1. April 17, 1926. Oil and Gas Possibilities near Sparta: by Gail F. Moulton; Petroleum Developments During 1925: by Gail F. Moulton. 8 pages, 1 figure. Price, 25 cents.

Illinois Petroleum No. 2. May 29, 1926. Notes on a Core Bit for Cable Tools: By Gail F. Moulton; Prospecting for Hoing Sand Oil Pools: by Gail F. Moulton and J. Marvin Weller; Recent Petroleum Developments in Illinois: by Gail F. Moulton. 6 pages. Price, 25 cents.

Illinois Petroleum No. 3. July 24, 1926. The Bearing of the Structural Relations Between the Pennsylvanian and Older Formations on Petroleum Prospecting in Western Illinois: by Gail F. Moulton; Oil Prospects in Central Pike County: by Alfred H. Bell; Current Oil Field Operations in Illinois: by Gail F. Moulton. 14 pages, 5 figures. Price, 25 cents.

Illinois Petroleum No. 4. August 28, 1926. Areas for Further Prospecting near the Martinsville Pool, Clark County: by Gail F. Moulton; Oil Investigations in the Centralia Area—Preliminary Report: by Alfred H. Bell. 12 pages, 3 figures. Price, 25 cents.

NEW

Illinois Petroleum No. 5. October 16, 1926. Oil Investigations in the Centralia Area—Preliminary Report (Concluded): by Alfred H. Bell; Oil-Field Water

*Edition exhausted.

Investigations—Waterloo Field: by Gail F. Moulton; Oil Possibilities of the Ayers Anticline: by Alfred H. Bell; Current Oil Field Operations in Illinois: by H. C. Spoor, Jr.

(1) Briefly summarizes the stratigraphy and structure of the Centralia area, describes the faults, discusses the developments, and recommends testing of the Junction City and Hoffman areas; (2) tabulates the results of water conditions in 13 wells, discusses their significance and the problem of water in the oil wells; (3) discusses the structure, production, and producing horizons and recommends areas to be tested in a local region in Bond County; (4) summarizes development during July, August, and September, 1926. 24 pages, 5 figures. Price, 25 cents.

Illinois Petroleum No. 6. December 4, 1926. The Sorento Dome [portions of Bond, Madison, and Montgomery Counties]: by Alfred H. Bell. 11 pages, 3 figures. Price, 25 cents.

Illinois Petroleum No. 7. February 19, 1927. Oil Possibilities of the Payson Anticline, Adams County, Illinois: by Ben B. Cox; Petroleum in Illinois during 1926: by Gail F. Moulton. 12 pages, 3 figures. Price, 25 cents.

Illinois Petroleum No. 8. April 16, 1927. Oil Possibilities of the Alexis Quadrangle, Mercer and Warren Counties, Illinois: by Harold R. Wanless; Summary of Oil Field Operations in Illinois during the First Quarter of 1927: by C. R. Clark and A. H. Bell. 12 pages, 3 figures. Price, 25 cents.

Illinois Petroleum No. 9. June 18, 1927. Oil Possibilities of the Galesburg Quadrangle, Knox and Warren Counties, Illinois: by R. S. Poor. 8 pages, 2 figures. Price, 25 cents.

Illinois Petroleum No. 10. July 23, 1927. Structure of Centralia and Sandoval Oil Fields, Illinois: by A. H. Bell; New Producing Horizon in Wabash County: by Gail F. Moulton. 12 pages, 6 figures. Price, 25 cents.

Illinois Petroleum No. 11. September 3, 1927. Recent Development in the Vicinity of Jacksonville: by Alfred H. Bell. 12 pages, 2 figures. Price, 25 cents.

Illinois Petroleum No. 12. September 24, 1927. Deeper Production in the Allendale Oil Field: by Gail F. Moulton.

Discusses the historical and recent development, the general stratigraphy and producing horizons, the structure, recommendations of areas for future prospecting, and the sizes of casings required for deep tests. Includes detailed logs of four deep wells in the northeast part of Wabash County. 19 pages, 2 figures. Price, 25 cents.

Illinois Petroleum No. 13. January 28, 1928. The Media Anticline, Henderson County, Illinois: by A. H. Bell and L. E. Workman. 11 pages, 3 figures. Price, 25 cents.

Illinois Petroleum No. 14. March 17, 1928. Structure and Oil Prospects of Eastern Clark County: by Gail F. Moulton and Jackson Young. 12 pages, 3 figures. Price, 25 cents.

Illinois Petroleum No. 15. May 12, 1928. A Study of the Core of the Yanaway Well No. 33 in the Siggins Pool: by J. E. Lamar; Corrosion in the Eastern Illinois Oil Fields: by J. E. Lamar and C. R. Clark.

(1) Describes the samples of the core and the tests applied and interprets the results of the tests; (2) discusses the methods and the conclusions of the study, the types of corrosion, the relation of chemical composition of oil-field brines to corrosion, substances that accelerate corrosion and effects of corrosion on various materials and tabulates corrosion data by counties. 22 pages, 1 figure. Price, 25 cents.

Illinois Petroleum No. 16. June 30, 1928. Recent Development on the Ayers Anticline: by Alfred H. Bell; Recent Drilling Northwest of St. Francisville, Lawrence County, Illinois: by Afred H. Bell. 18 pages, 5 figures. Price, 25 cents.

[This space may be used for noting additional press bulletins as they appear.]

EDUCATIONAL SERIES

This new series of nontechnical bulletins, started in 1927, is being issued primarily for educational purposes. The various bulletins will summarize the chief facts of interest on broad geological topics bearing on the State of Illinois, with a view to providing authoritative scientific information for the public schools of the State and for lay readers.

Educational Series No. 1. The Story of the Geologic Making of Southern Illinois: by Stuart Weller. 1927.

NEW

Reviews advancement made in the interpretation of nature, gives the modern view of geologic time and processes and presents the story of the geologic making of southern Illinois, particularly the Illinois Ozarks. 42 pages, 12 figures. Paper bound. Price, 10 cents.

Educational Series No. 2. The Rock River Country of Northern Illinois: by Deette Rolfe. 1929.

NEW

Discusses the general setting of the Rock River Valley from the Illinois-Wisconsin boundary to the city of Dixon, describes nontechnically the geologic formations and presents the geologic story of this scenic and historic Indian country. 59 pages, 47 figures. Paper bound. Price, 10 cents.

MONOGRAPHS

From time to time, the Survey will publish as monographs of quarto size papers which possess permanent and recognized scientific value but touch the economic resources of the State only indirectly.

Monograph 1. The Mississippian Brachiopoda of the Mississippi Valley Basin: by Stuart Weller. 1914.

Part 1.—Detailed description of stratigraphy and species. 508 pages. Part 2.—plates (83). Price, $1.00.

GEOLOGIC FOLIOS

The following geologic folios have been published by the United States Geological Survey, following in most cases cooperative work with the Illinois State Geological Survey. They are published in the form of a library edition measuring 18½ by 23 inches, and include descriptions of the geography, general geology, and economic mineral deposits of the area and a statement of the geologic history. Each folio covers one or more quadrangles, a quadrangle being a unit area of approximately 225 square miles, bounded by parallels and meridians. The folios numbered 105 or less were published prior to the cooperative agreement between the State and Federal surveys. Price, 25 cents.

*67 Danville
*81 Chicago, Riverside, Desplaines and Calumet
*105 Patoka
145 Lancaster-Mineral Point
*185 Murphysboro and Herrin
188 Tallula and Springfield
195 Belleville and Breese
200 Galena and Elizabeth
208 Colchester and Macomb
213 New Athens and Okawville
216 Carlyle and Centralia
220 Gillespie-Mount Olive

MAPS

Quadrangle Topographic Maps made in cooperation with the United States Geological Survey are available for 165 quadrangles.

These maps cover unit areas of approximately 225 square miles, bounded by parallels and meridians rather than by county lines. Each quadrangle has been given the name of an important town within its limits. The maps are comprehensive in that they show all that the ordinary geographic map shows and in addition the relief and configuration of the land surface, elevation above sea-level, and watersheds, and they distinguish churches, schools, cemeteries, and individual houses, where the scale permits. Some of the maps are also published with green overprints showing woodland areas. The more recent maps have also a red overprint showing the paved highways. Published on a scale of 1:62,500 or about one mile to the inch.

* Edition exhausted.

Single engraved quadrangle maps may be purchased for 10 cents each, or for 6 cents each in lots of 50 or more. A limited supply of photolithographic maps (brown print only) for quadrangles for which the engraved maps are not yet available may be secured for urgent purposes; single copies on request, additional copies 5 cents each.

The available topographic maps are listed below. Those printed in italics are available at this date of issue only in photolithographic form. The numbers refer to the index map, fig. 1, page 25.

1. Waukegan
‡2. Grays Lake
‡3. McHenry
‡5. Belvidere
‡6. Rockford
10. Elizabeth
‡11. Galena
°12. (Use Peosta small scale map)
°14. Savanna
‡17. Oregon
‡18. Kings
‡19. Kirkland
‡21. Elgin
22. Barrington
*23. Highwood (see Chicago area maps)
*24. Evanston (see Chicago area maps)
*25. Chicago (see Chicago area maps)
*26. Riverside (see Chicago area maps)
27. Wheaton
‡32. Dixon
°35. Clinton
°36. Goose Lake
°37. Davenport, Illinois part revised included on Milan.
°38. Leclaire
°39. (Use Cordova small scale map)
‡46. Yorkville
‡47. Joliet
*48. Des Plaines (see Chicago Area maps)
*49. Calumet (see Chicago area maps)
‡52. Wilmington
‡53. Morris
‡54. Marseilles
55. Ottawa
56. LaSalle
57. Hennepin
‡58. Buda
62. Milan, includes Illinois part of Davenport
‡63. Edington
‡67. Alexis
°72. Lacon
‡74. Streator
‡77. Herscher
‡78. Kankakee
‡79. Momence
°87. Metamora
°88. Dunlap
‡91. Galesburg
‡92. Monmouth
‡97. LaHarpe
‡98. Good Hope
‡99. Avon
‡100. Canton
101. *Glasford*
102. Peoria.
103. *Mackinaw*, all but north end
104. *Danvers*
105. *Normal*
‡113. Paxton
‡114. Gibson City
120. *Manito*, north half
‡121. Havana
‡122. Vermont
‡123. Macomb
‡124. Colchester
°127. Kahoka, small scale only
‡131. Rushville
‡132. Beardstown
133. *Chandlerville*, northwest corner
‡136. Lincoln
‡140. Mahomet
‡141. Urbana
143. Danville
152. *Springfield*, revised
153. Tallula
156. *Meredosia*, incomplete
157. *Mt. Sterling*
‡158. Liberty
‡159. Quincy, Illinois part
†160. *Hannibal*, Illinois part
†161. *Barry*, Illinois part
‡162. Pittsfield
‡163. Griggsville
‡164. Winchester
‡166. Waverly
‡167. Divernon
‡168. Taylorville
‡184. Raymond
‡185. Carlinville
‡187. Roodhouse
188. *Pearl*
189. *Nebo*, Illinois part, includes Illinois part of Vera
190. *Vera*, Illinois part revised, included with Nebo. (See Louisiana small scale map)
†191. *Hardin*, Illinois part
193. Brighton
‡194. Gillespie
‡195. Mt. Olive
‡204. Birds
205. Hardinville
213. *Edwardsville*
214 *Alton*
†215. *Bonfils*, Illinois part
†216. *Brussels*, Illinois part revised (See O'Fallon small scale map)
217. St. Louis (double quadrangle, 20 cents)
218. Belleville
219. Breese
220. Carlyle
‡221. Centralia
‡226. Sumner
‡227. Vincennes
228. Princeton
229. Mt. Carmel
236. Okawville
237. New Athens
‡238. Waterloo
‡239. Kimmswick
‡240. Crystal City
‡241. Renault
‡242. Baldwin
‡243. Coulterville
‡244. Pinckneyville
‡245. Duquoin
250. New Harmony
‡251. New Haven
252. Eldorado (green overprint only)
253. Galatia
254. West Frankfort
255. Herrin
256. Murphysboro
‡257. Campbell Hill
‡258. Chester
259. Weingarten
‡260. Altenburg
‡261. Alto Pass
‡262. Carbondale
‡263. Marion
‡264. Harrisburg
265. Equality (green over print only)
‡266. Shawneetown
‡267. Cave-in-Rock
‡268. Golconda
‡269. Brownfield
‡270. Vienna
‡271. Dongola
272. Jonesboro
‡273. Cape Girardeau
276. *Joppa*
277. *Paducah*
278. *Smithland*

Italics indicate that only advance photolithographic map is available.
* Edition exhausted. Consult public, technical, or university libraries.
‡ Map with or without green overprint showing forested areas.
† Area surveyed; photolithographic map available April 1, 1929.
° Reconnaissant map only.

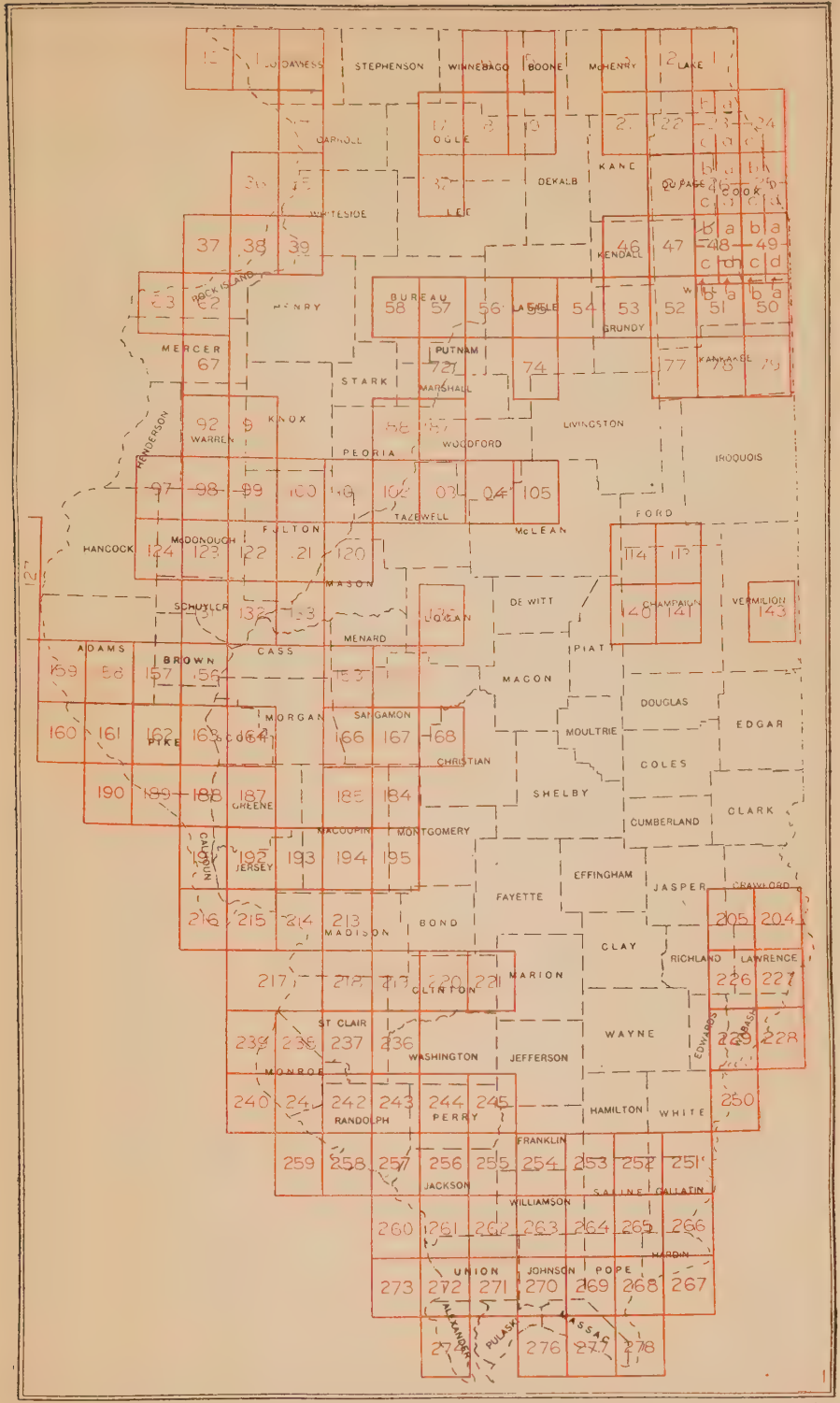

Fig. 1. Index map of quadrangle topographic maps listed on pages 24 and 26. See also additional maps listed on pages 26 and 27.

Special Topographic Maps of the Chicago Area.

NEW

Scale, 1:24,000 or about 2½ inches to the mile. Published in units about 20x26 inches, each covering approximately 56 square miles. In the following list those printed in italics are available at this date of issue only in photolithographic form. The numbers refer to the index map, fig. 1, page 25. Price, the same as quadrangle maps.

‡23a. Highland Park
‡23b. Wheeling
‡23c. Arlington Heights
23d. *Park Ridge*
24b. (Included with Evanston)
‡24c. Evanston (includes 24b)
25a. (*Included with Chicago Loop*)
25b. *Chicago Loop* (includes 25a)
25c. *Englewood*
25d. *Jackson Park*
‡26a. River Forest
‡26b. Elmhurst
‡26c. Hinsdale
‡26d. Berwyn
‡48a. Palos Park
‡48b. Sag Bridge
48c. *Mokena*
48d. *Tinley Park*
49a. *Calumet Lake*
49b. *Blue Island*
49c. *Harvey*
49d. *Calumet City*
50a. *Dyer,* north end
50b. *Steger,* north end
51a. *Frankfort,* north end
51b. *Brisbane,* north end

Small Scale Topographic Maps. A few of the quadrangle maps of Illinois are prepared on a scale of 1:125,000, or about 2 miles to an inch, and each includes an area half a degree in either dimension or about 900 square miles. The contour interval is 20 feet. The maps are of a uniform size, approximately 16 inches by 20 inches. Quadrangle numbers refer to index map, fig. 1, p. 25. Price, single copy, 10 cents; 6 cents each in lots of 50 or more.

°Cordova—includes quadrangles 35, 36, 38, 39; 39 is the only one not available on the medium scale.
°Kahoka—mainly in Iowa; (see quadrangle 127).
Lancaster—mainly in Wisconsin and Iowa; north of quadrangle 12.
°Louisiana—mainly in Missouri; for Illinois part revised see quadrangle 190.
Mineral Point—mainly in Wisconsin; north of quadrangles 10 and 11.
°O'Fallon—mainly in Missouri; for Illinois part revised see quadrangle 216.
Patoka—includes quadrangles 228, 229, 250 and a quadrangle entirely in Indiana.
°Peosta—mainly in Iowa; includes quadrangle 12, which is not available on the medium scale.
°Rock Island—mainly in Iowa; includes quadrangle 37.

County Topographic Maps. For some counties that have been completely surveyed topographic maps similar to quadrangle maps have been published. The maps are prepared on a scale of 1:62,500, or about a mile to an inch, and are engraved in four colors. Price, 25 cents each; mounted on cloth, when available, 50 cents each.

Clinton County (available mounted)
Gallatin County
Hardin County
Lawrence County
McDonough County
Monroe County (available mounted)
Randolph County
*St. Clair County

Special Topographic Drainage Maps. Topographic maps have been prepared for the valleys of the principal streams in the State and the lands immediately adjacent, on a scale of 1:24,000, or about 2½ inches to the mile. They are useful in planning reclamation projects, and are especially useful in connection with Bulletins 25, 32, and 42. Price, complete sets, 50 cents each.

Big Muddy River: from Mississippi River to a location just west of Benton. 5 sheets. Contour interval 5 feet.

Embarrass River and North Fork: from Little Wabash River to Norveil and Moriah. 8 sheets. Contour interval 10 feet. Elevations shown in red.

Kaskaskia River: from Evansville to Fayette-Shelby County line. 13 sheets. Contour interval 5 feet.

*Pecatonica River: from Rock River to Freeport. 4 sheets.

*Sangamon River: from Salt Creek to Robey, and South Fork Sangamon River as far as Flat Branch, thence up Flat Branch. Brownline photolithograph, scale 1:48,000. 3 sheets. Contour interval 10 feet.

Spoon River: from Illinois River to London Mills. 3 sheets. Contour interval 5 feet. Elevations shown in red.

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‡ Map with or without green overprint showing forested areas.
° Reconnaissant map only.
* Exhausted.

Starved Rock State Park Topographic Map. Compiled in cooperation with the U. S. Geological Survey.

Size 8 by 20 inches. Scale approximately two inches to the mile. Published only with green overprint showing forested areas; otherwise similar to quadrangle topographic maps. Price, 10 cents.

Camp Grant Quadrangle Special Topographic Map. Compiled in cooperation with the U. S. Geological Survey.

This map is 20 by 33 inches, or double the standard size of quadrangle maps. It includes the south portions of the Rockford and Belvidere quadrangles and the north portions of the Kings and Kirkland quadrangles. It covers one-eighth of a square degree, or about 433 square miles, and is limited by the parallels 42°05′ and 42°20′ and the meridians 88°45′ and 89°15′. Scale 1:62500, or about 1 mile to the inch; contour interval, 20 feet. Published with and without green overprint showing woodland areas. A brief popular discussion of the surficial geology, the geologic history, and the physiography and geography of the region is printed on the back of the map. Price, 10 cents each.

Base Map of Illinois. Fifth edition (1925). In cooperation with U. S. Geological Survey.

Size 30 by 51 inches, scale approximately 8 miles to the inch. Engraved in three colors: county and township lines, towns and railroads shown in black; rivers and lakes shown in blue; elevation above sea-level of more than 2,000 towns shown in red. Price, 50 cents. Map without red overset, 25 cents.

Geologic Map of Illinois. Fourth edition (1917).

Size 35 by 51 inches, scale approximately 8 miles to the inch. Engraved in several colors to show geological formations. Includes generalized columnar sections for southern, central, and northern Illinois, and cross-sections illustrating geologic structure of the State. Price, 50 cents.

Map and Directory of Illinois Mineral Industries. 1927.

Size 31 by 52 inches; scale approximately 8 miles to the inch. Engraved in four colors. Shows locations of oil and gas fields, coal field boundary, refineries, mines, pits, quarries, etc., and is accompanied by a directory giving names and addresses of all operators for whom locations are given on the map. Directory is arranged alphabetically, both by industry and by county. Price, 50 cents.

Oil and Gas Field Map of Illinois. In cooperation with U. S. Geological Survey. 1921.

Size 32 by 51 inches, scale approximately 8 miles to the inch. Engraved in three colors. Shows locations of oil and gas fields, pipe lines, refineries, and known anticlinal axes of the State. Price, 50 cents.

Publications of the original Geological Survey of Illinois: by A. H. Worthen and assistants.

The following reports were issued by the original State Geological Survey. These are now out of print and are largely supplanted by the more recent publications of the present Survey. The research geologist, however, will find much information of value in these reports.

*Volume I. Geology. Contents: Physical features, general principles, surface geology and stratigraphical geology, by A. H. Worthen; geology of the lead region, by J. D. Whitney; reports on the coal fields and on the prairies, by Leo Lesquereux; chemical report by J. V. Z. Blaney; geology of Randolph, St. Clair, Madison, and Hancock counties, by A. H. Worthen; geology of Hardin County, by A. H. Worthen and Henry Engelmann; geology of Johnson, Pulaski, and Pope counties, by Henry Engelmann. 523 pages, 11 plates. 1866.

*Volume II. Paleontology: by A. H. Worthen, F. B. Meek, J. S. Newberry, E. D. Cope, H. A. Prout, and Leo Lesquereux. Includes a brief introduction of the correlation of the bedrock formations in the State and describes and illustrates the fossilized remains of new species of vertebrates, invertebrates, and plants that occur in the Carboniferous formations in Illinois. 496 pages, 39 text figures, 50 plates, 1866.

*Volume III. Geology and Paleontology. Contents: Coal Measures and Lower Carboniferous limestone, and geology of Alexander, Union, Jackson, Perry, Jersey, Greene and Scott counties, by A. H. Worthen; geology of Washington, Clinton, Marion and Jefferson counties, by Henry Engelmann; geology of Cook County, by H. M. Bannister; geology of LaSalle County, by H. C. Freeman; paleontology of Illinois, consisting of descriptions and illustrations of invertebrate fossils in all the Paleozoic formations, by F. B. Meek and A. H. Worthen (insects, by S. H. Scudder); chemical analyses by J. V. Z. Blaney. 588 pages, numerous text figures, 20 plates. 1868.

*Volume IV. Geology and Paleontology. Contents: geology of Calhoun, Pike, Adams, Brown, Schuyler, and Fulton counties, by A. H. Worthen; geology of DeKalb, Kane, DuPage, McHenry, Lake, Kendall, Morgan, Cass, Menard, Tazewell, McLean, Logan, and Mason counties, by H. M. Bannister; geology of Grundy, Will, Kankakee, Iroquois, Vermilion, Champaign, Edgar, and Ford counties, by Frank H. Bradley; geology of Henderson, Warren, Mercer, Knox, Stark, and Woodford counties, by H. A. Green; paleontology of Illinois, including descriptions and illustrations of vertebrate fossils, by J. S. Newberry and A. H. Worthen, and of fossil plants, by Leo Lesquereux. 522 pages, 31 plates, 1870.

*Volume V. Geology and Paleontology. Contents: Geology of northwestern Illinois and Jo Daviess, Stephenson, Carroll, Winnebago, Boone, Ogle, Lee, Whiteside, Bureau, Henry, Marshall, and Putnam counties, by James Shaw; geology of Rock Island county, by A. H. Worthen and James Shaw; geology of Peoria, McDonough, Monroe, Macoupin and Sangamon counties, by A. H. Worthen; descriptions and illustrations of invertebrate fossils from the Carboniferous formations, by F. B. Meek and A. H. Worthen. 632 pages, 32 plates. 1873.

*Volume VI. Geology and Paleontology. Contents: geology of Coal Measures (summary) and of Clark, Crawford, Jasper, Lawrence, Richland, Wabash, Edwards, White, Hamilton, Wayne, Clay, Cumberland, Coles, Douglas, Williamson, and Franklin counties, by A. H. Worthen; geology of Bond, Fayette, Montgomery, Christian, Shelby, Effingham, Moultrie, Macon, and Piatt counties, by G. C. Broadhead; geology of Gallatin and Saline counties, by E. T. Cox; geology of Livingston County, by H. C. Freeman; descriptions and illustrations of fossil fishes, by Orestes St. John and A. H. Worthen; descriptions and illustrations of invertebrate fossils from the Paleozoic formations, by A. H. Worthen and F. B. Meek. Accompanied by a geological map of the State. 546 pages, text figures, 33 plates. 1875.

*Volume VII. Geology and Paleontology. Contents: Economical geology, by A. H. Worthen; descriptions and illustrations of fossil fishes in the Carboniferous formations, by Orestes St. John and A. H. Worthen: descriptions and illustrations of invertebrate fossils, by A. H. Worthen and S. A. Miller. 380 pages, text figures, 31 plates. 1883.

*Volume VIII. Text and Plates. Edited by Joshua Lindahl. Geology and paleontology. Contents: Drift deposits of Illinois and economic geology, by A. H. Worthen; descriptions and illustrations of fossil invertebrates, by A. H. Worthen, of fossil crinoids and blastoids, by Charles Wachsmuth and Frank Springer, and of fossil sponges and fossil bryozoa, by E. O. Ulrich; appendix, consisting of biography of A. H. Worthen, by N. W. Bliss and C. A. White and general index to the eight volumes, by Joshua Lindahl. 888 pages, text figures, and geologic map in text volume; 78 plates bound separately. 1890.

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*Edition exhausted. Consult public, technical, or university libraries.

ILLINOIS MINING INVESTIGATIONS
(Cooperative Agreement)

State Geological Survey Division
Engineering Experiment Station, University of Illinois
U. S. Bureau of Mines

The publications listed on this and the three following pages are issued by three different organizations in cooperation, and their distribution is controlled by different regulations. Care should be taken to address the proper office as indicated.

For the following Bulletins, address Chief, State Geological Survey Division, Urbana, Illinois:

***Bulletin 1.** Preliminary Report on Organization and Method of Investigations. 1913.

Discusses the studies of geological features and of mining methods undertaken according to the agreement, the geology of the coal fields and the chemical character of Illinois coals, the three mining systems in Illinois, and the equipment in the laboratory. 71 pages, 26 figures.

***Bulletin 3.** Chemical Study of Illinois Coals: by S. W. Parr. 1916.

Describes and discusses methods of sampling and laboratory practices and tabulates a large number of analyses. 86 pages, 1 plate, 10 figures.

***Bulletin 10.** Coal Resources of District I (Longwall): by G. H. Cady. 1915.

Discusses the general stratigraphy of the pre-Pennsylvanian formations, the detailed stratigraphy of the Pennsylvanian formations in the various mine fields, the regional structure, glaciation, the distribution, correlation, and physical character of the coals and associated strata, and the chemical composition of the coals, tabulates the production according to counties, and includes detailed logs of 17 deep wells in Bureau, Grundy, Marshall, Putnam, and parts of Kankakee, LaSalle, Livingston, Will, and Woodford counties. 149 pages, 11 plates, 27 figures.

Bulletin 11. Coal Resources of District VII: by Fred H. Kay. 1915. Reprinted in 1922.

Discusses the general Pennsylvanian stratigraphy and regional structures of the district and the production, the Pennsylvanian formations, and the geologic structure in each of Bond, Christian, Clinton, Fayette, Macoupin, Madison, Marion, Montgomery, Moultrie, Perry, Shelby, St. Clair, Washington, and parts of Macon, Randolph, and Sangamon counties. Includes an economic map on a scale of 4 miles to an inch and detailed logs of 41 deep wells. 233 pages, 4 plates, 47 figures. Price $1.00.

Bulletin 14. Coal Resources of District VIII (Danville): by Fred H. Kay and K. D. White. 1915.

Describes and interprets the general stratigraphy, the structure, the coal beds, the chemical composition of the coal, and stratigraphic sections in Vermilion and Edgar counties. Includes detailed logs of 14 wells or drill holes, a summary of numerous coal tests, and several maps. 68 pages, 7 plates, 10 figures. Price, 75 cents.

Bulletin 15. Coal Resources of District VI: by G. H. Cady. 1916.

Describes and discusses the general geology of the surficial deposits, the Pennsylvanian formations with special attention to the economic aspects and structure of the coals and associated strata, and the chemical composition of the coal in Jefferson, Franklin and parts of Williamson counties. Includes several maps and cross-sections, tables of well data and chemical analyses, and detailed logs of two drill-cores. 94 pages, 7 plates, 25 figures. Price, 75 cents.

***Bulletin 16.** Coal Resources of District II (Jackson County): by G. H. Cady. 1917.

Describes and discusses the geography, the stratigraphy, and the geologic structure, with special attention to the economic aspects of the coals and associated strata in the northeast part of Jackson County. Includes a map and tabulated coal data and chemical analyses. 55 pages, 3 plates, 13 figures.

Bulletin 17. Surface Subsidence in Illinois Resulting from Coal Mining: by Lewis E. Young. 1916.

Discusses geologic conditions, resultant damages, descriptive data, protective measures, and investigations of subsidence. 112 pages, 4 plates, 56 figures. Price, 25 cents.

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*Edition exhausted. Consult public, technical, or university libraries.

Bulletin 18. Tests on Clay Materials Available in Illinois Coal Mines: by R. T. Stull and R. K. Hursh. 1917.

Discusses the characteristics of clays and their behavior in burning, describes the methods of testing, summarizes the characteristics of roof and floor clays in the State, and describes and tabulates the results of tests on 106 samples of clays associated with coals in 42 mines in the State. 130 pages, 62 figures. Price, 50 cents.

Bulletin 19. Coal Resources of District V: by G. H. Cady. 1919.

Describes and discusses the physiography, the surficial deposits, and the stratigraphy and structure of the Pennsylvanian formations, with special attention to the economic aspects of the coals and associated strata, and tabulates a large amount of descriptive data and several chemical analyses of coal in Saline and Gallatin counties. Includes a structure-contour and economic map and several cross-sections. 135 pages, 9 plates, 22 figures. Price, 75 cents.

Bulletin 20. Carbonization of Illinois Coals in Inclined Gas Retorts: by F. K. Ovitz. 1918.

Describes the tests and results of coking a mixture of Illinois and Kentucky coals. A preliminary report on the results of an investigation which are published in complete form as U. S. Bureau of Mines Bulletin 138. 24 pages, 3 figures. Price, 25 cents.

Bulletin 21. The Manufacture of Retort Coal-Gas in the Central States Using Low-Sulphur Coal from Illinois, Indiana, and Western Kentucky: by W. A. Dunkley and W. W. Odell. 1918.

Enumerates problems in the use of central district coals in coal-gas manufacture, describes briefly the results of retort-gas practice with these coals, and discusses in some detail the economical advantage of central district coal in the manufacture of the coal-gas. 24 pages, 3 figures. Price, 25 cents.

***Bulletin 22.** Water-Gas Manufacture with Central District Bituminous Coals as Generator Fuel: by W. W. Odell and W. A. Dunkley. 1918.

Enumerates problems in the use of central district coal in water-gas manufacture, makes preliminary suggestions as to operating methods with these coals, gives results of tests, and discusses in some detail the economical advantage of central ditrict coal as generator fuel. 24 pages, 3 figures.

Bulletin 23. Mines Producing Low-Sulphur Coal in the Central District: by Gilbert H. Cady. 1919.

Lists mines in Illinois, Indiana and western Kentucky probably capable of producing coal with less than 1.25 per cent sulphur, in this respect suitable for use in the manufacture of water-gas and retort coal-gas. 14 pages. Price, 25 cents.

Bulletin 24. Water-Gas Operating Methods with Central District Bituminous Coals as Generator Fuel, a Summary of Experiments on a Commercial Scale: by W. A. Dunkley and W. W. Odell. 1919.

Enumerates eleven problems in the operation of water-gas plants with central district bituminous coal as generator fuel, and summarizes possible solutions evolved from commercial experiments at Streator, Illinois. A preliminary report of an investigation of which the complete report is published as U. S. Bureau of Mines Bulletin 203. 27 pages. Price, 25 cents.

Bulletin 25. Gas Purification in the Medium-sized Gas Plants of Illinois: by W. A. Dunkley and C. E. Barnes. 1920.

Discusses the factors, conditions, process, equipment, operation, capacity, and results of purification, the quality of oxide utilized, and the effect of using Illinois coals. 71 pages, 5 figures. Price, 25 cents.

Bulletin 26. Coal Resources of District IV: by Gilbert H. Cady. 1921.

Describes and discusses the geography, the surficial deposits, the general stratigraphy and structure of the Pennsylvanian formations and the chemical value of coal and presents by counties detailed descriptions of the Pennsylvanian formations, especially the coals and associated strata, and detailed mine notes for Cass, Christian, DeWitt, Fulton, Knox, Logan, McLean, Macon, Mason, Menard, Peoria, Sangamon, Schuyler, and Tazewell counties. Includes several structure and economic maps and stratigraphic sections. 247 pages, 8 plates, 31 figures. Price, 75 cents.

†Bulletin 27. Analyses of Illinois Coals: compiled by G. W. Hawley. 1923.

Comprises all the analyses included in Bulletin 29 in addition to analyses of coals sampled since 1914. Contains average analyses from more than 200 mines of the State, grouped by mines, by counties, by districts, and by coal beds. 68 pages, 1 figure. Price, 25 cents.

*Edition exhausted. Consult public, technical, or university libraries.
†Originally designated as an extract.

Bulletin 28. Preliminary Report on Coal Stripping Possibilities in Illinois: by Harold E. Culver. 1925.

Discusses the historical and recent development and the geological features, chemical composition, and other features that are important factors in strip mining and the possibilities of strip mining in each of 36 counties. 61 pages, 22 figures. Price, 50 cents.

Bulletin 29. Coal Resources of District III (Western Illinois): by Harold E. Culver. 1925.

Discusses the topography, general stratigraphy, and structure, the chemical composition of the coals, and the detailed Pennsylvanian stratigraphy, structure, and production in Adams, Brown, Calhoun, Cass, Fulton, Greene, Hancock, Henderson, Henry, Jersey, Knox, McDonough, Mercer, Morgan, Pike, Rock Island, Schuyler, Scott, Warren, Whiteside, and parts of Madison and Mason counties. Includes two coal-field maps and about 20 detailed logs of wells and test borings. 128 pages, 2 plates, 14 figures. Price, 50 cents.

Bulletin 30. Coal Losses in Illinois: by C. A. Allen. 1925.

Discusses by districts the losses of coal resulting from the mining methods now employed. 36 pages, 7 figures. Price, 25 cents.

Bulletin 31. Coal Stripping Possibilities in Southern and Southwestern Illinois: by Gilbert H. Cady. 1927.

NEW

Discusses the factors to be considered, the accompanying maps, the general character of the coals and associated strata, the physical and chemical characteristics of the coals, and the special areas recommended as strip mine possibilities. Includes detailed sections in Perry, Randolph, St. Clair, and Williamson counties. 59 pages, 8 plates, 2 figures. Price 50 cents.

Bulletin 32. Coal Stripping Possibilities in Saline and Gallatin Counties near Equality: by Lloyd G. Henbest.

IN PRESS

Discusses briefly the topography and general geology of the area and describes for five specific areas the location and transportation facilities, the thickness and character of the coal and of the overburden, and gives an estimate of resources. Includes tables of field data. Accompanied by a map on the scale of one-half mile to the inch. — pages, 1 plate. Price, 25 cents.

[This space may be used for noting additional bulletins as they appear.]

For the following bulletins address Director, Engineering Experiment Station, University of Illinois, Urbana, Illinois:

*Bulletin 2. Coal Mining Practice in District VIII (Danville): by S. O. Andros. 1914.

*Bulletin 4. Coal Mining Practice in District VII: by S. O. Andros. 1914.

*Bulletin 5. Coal Mining Practice in District I (Longwall): by S. O. Andros. 1914.

Bulletin 6. Coal Mining Practice in District V (mines in bed 5 in Saline and Gallatin counties): by S. O. Andros. 1914. 34 pages. Price, 10 cents.

Bulletin 7. Coal Mining Practice in District II (mines in bed 2 in Jackson county): by S. O. Andros. 1914. 22 pages. Price, 10 cents.

Bulletin 8. Coal Mining Practice in District VI (mines in bed 6 in Franklin, Jackson, Perry, and Williamson counties): by S. O. Andros. 1914. 49 pages. Price, 10 cents.

Bulletin 9. Coal Mining Practice in District III (mines in beds 1 and 2 in Brown, Calhoun, Cass, Fulton, Greene, Hancock, Henry, Jersey, Knox, McDonough, Mercer, Morgan, Rock Island, Schuyler, Scott and Warren counties): by S. O. Andros. 1915. 36 pages. Price, 10 cents.

Bulletin 12. Coal Mining Practice in District IV (mines in bed 5 in Cass, DeWitt, Fulton, Knox, Macon, Mason, McLean, Menard, Peoria, Sangamon, Schuyler, Tazewell, and Woodford Counties): by S. O. Andros, 1915. 57 pages. Price, 10 cents.

Bulletin 13. Coal Mining in Illinois: by S. O. Andros. Complete resume of all the district reports. 1915. 250 pages. Price, 50 cents.

*Bulletin 91. Subsidence Resulting from Mining: by L. E. Young and H. H. Stoek. A preliminary study of surface subsidence in coal mining districts. 1916. (See Min. Invs. Bull. 17 and U. S. Bureau of Mines Bull. 238.)

Bulletin 100. Percentage of Extraction of Bituminous Coal with Special Reference to Illinois Conditions: by C. M. Young. 1917. 175 pages, 46 figures. Price, 90 cents.

Bulletin 113. Panel System of Coal Mining. A graphical study of percentage of extraction: by C. M. Young. 1919. 74 pages, 20 figures. Price, 40 cents.

Bulletin 119. Some Conditions Affecting the Usefulness of Iron Oxide for City Gas Purification: by W. A. Dunkley. 1921. 62 pages, 6 figures. Price, 35 cents.

Bulletin 125. The Distribution of the Forms of Sulphur in the Coal Bed: by H. F. Yancey and Thomas Fraser. 1921. 94 pages, 24 figures. Price, 50 cents.

Bulletin 132. A Study of Coal Mine Haulage in Illinois: by H. H. Stoek, J. R. Fleming, and A. J. Hoskin. 1922. 36 pages, 29 figures. Price, 70 cents.

Bulletin 144. Power Studies in Illinois Coal Mining: by A. J. Hoskin and T. Fraser. 1924. 80 pages, 3 figures. Price, 45 cents.

Bulletin 151. A Study of Skip Hoisting in Illinois Coal Mines: by A. J. Hoskin. 1925. 72 pages. Price, 35 cents.

NEW Bulletin 158. Measurement of Air Quantities and Energy Losses in Mine Entries, Part I: by A. C. Callen and C. M. Smith. 1926. 84 pages. Price, 45 cents.

NEW Bulletin 170. Measurement of Air Quantities and Energy Losses in Mine Entries, Part II: by A. C. Callen and C. M. Smith. 1927. 76 pages. Price, 45 cents.

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*Edition exhausted. Consult public, technical, or university libraries.
†Obtainable only through the Superintendent of Documents, Washington, D. C. Copies may be found in public, technical, or university libraries.

NEW **Bulletin 184.** Measurement of Air Quantities and Energy Losses in Mine Entries, Part III: by A. C. Callen and C. M. Smith. 1928. 68 pages. Price, 35 cents.

For the following publications address **Director, U. S. Bureau of Mines, Washington, D. C.**, unless the free edition is exhausted, in which case they are obtainable only through the Superintendent of Documents, Government Printing Office, Washington, D. C.

***Bulletin 72.** Occurrence of Explosive Gases in Coal Mines: by N. H. Darton. 1915.

***Bulletin 83.** The Humidity of Mine Air: by R. Y. Williams. 1914.

†**Bulletin 99.** Mine Ventilation Stoppings: by R. Y. Williams. 1915. Price, 10 cents.

†**Bulletin 102.** The Inflammability of Illinois Coal Dusts: by J. K. Clement and L. A. Scholl, Jr. 1916. Price, 15 cents.

†**Bulletin 137.** Use of Permissible Explosives in the Coal Mines of Illinois: by James R. Fleming and John W. Koster. 1917. Price, 20 cents.

†**Bulletin 138.** Coking of Illinois Coals: by F. K. Ovitz. 1917. Price, 20 cents.

Bulletin 203. Central District Bituminous Coals as Water-Gas Generator Fuel: by W. W. Odell and W. A. Dunkley. 1924.

Bulletin 234. The Screen Sizing of Coal, Ores and Other Minerals: by E. A. Holbrook and Thomas Fraser. 1924.

NEW **Bulletin 238.** Subsidence Due to Coal Mining in Illinois: by C. A. Herbert and J. J. Rutledge. 1927.

†**Technical Paper 246.** Water-Gas Apparatus and the Use of Central District Coal as Generator Fuel: by W. W. Odell. 1921. Price, 5 cents.

†**Technical Paper 268.** Preparation and Uses of Tar and Its Simple Crude Derivatives: by W. W. Odell. 1922. Price, 15 cents.

†**Technical Paper 284.** Coal and Coke Mixtures as Water-gas Generator Fuel: by W. W. Odell. 1921. Price, 10 cents.

Technical Paper 304. Water-gas Tar Emulsions: by W. W. Odell. 1923.

Technical Paper 326. Fires in Steamship Bunker and Cargo Coal: by H. H. Stoek. 1923. 51 pages, 4 figures.

Technical Paper 330. Small Hose Streams for Fighting Mine Fires: by L. D. Tracy and R. W. Hendricks. 1925. 23 pages. 5 plates, 9 figures.

Technical Paper 332. Conditions Affecting the Activity of Iron Oxides in Removing Hydrogen Sulphide from City Gas: by W. A. Dunkley and R. D. Leitch. 1924. 33 pages, 9 figures.

Technical Paper 335. Bituminous Coal as Generator Fuel in Large Water-Gas Sets with Waste-Heat Boilers: by W. A. Dunkley. 1925. 43 pages. 6 plates, 4 figures.

Technical Paper 361. Cleaning Tests of Illinois Coals: by Thomas Fraser and H. F. Yancey. 1925. 23 pages, 6 figures.

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*Edition exhausted. Can be found in public, technical or university libraries.

† Obtainable only through the Superintendent of Documents, Washington, D. C.

U. S. BUREAU OF MINES PUBLICATIONS
(In Addition to Cooperative Agreement)

A complete list of all publications issued by the U. S. Bureau of Mines is obtainable on request from the Director, U. S. Bureau of Mines, Washington, D. C. Only publications referring to Illinois or useful to Illinois industries are listed here.

BULLETINS

*Bulletin 6. Coals Available for the Manufacture of Illuminating Gas; by A. H. White and Perry Barker, compiled and revised by H. M. Wilson. 1911. 77 pages, 4 plates, 12 figures.

*Bulletin 11. The Purchase of Coal by the Government under Specifications, with Analyses of Coal Delivered for the Fiscal Year 1908-9: by G. S. Pope. 1910. 80 pages.

°Bulletin 22. Analyses of Coals in the United States, with Descriptions of Mine and Field Samples Collected between July 1, 1904, and June 30, 1910: by N. W. Lord, with chapters by J. A. Holmes, F. M. Stanton, A. C. Fieldner, and Samuel Sanford. 1913. Part I, Analyses, pages 1-321; Part II, Descriptions of Samples, pages 321-1200, 1 figure. Price, 85 cents.

°Bulletin 85. Analyses of Mine and Car Samples of Coal Collected in the Fiscal Years 1911 to 1913: by A. C. Fieldner, H. I. Smith, A. H. Fay, and Samuel Sanford. 1914. 444 pages, 2 figures. Price, 45 cents.

°Bulletin 95. Glossary of Mining Terms: by A. H. Fay, 1920. 754 pages. Price, 75 cents. (Bound in cloth.)

°Bulletin 123. Analyses of Mine and Car Samples of Coal Collected in the Fiscal Years 1913 to 1916: by Arno C. Fieldner, H. I. Smith, J. W. Paul, and Samuel Sanford. 1918. 78 pages, 2 figures. Price, 50 cents.

‡Bulletin 134. The Use of Mud-Laden Fluid in Oil and Gas Wells: by J. O. Lewis and W. F. McMurray. 1916. 86 pages, 3 plates, 18 figures.

°Bulletin 136. The Deterioration of Stored Coal: by H. C. Porter and F. K. Ovitz. 1917. 38 pages, 7 plates. Price, 10 cents.

°Bulletin 163. Method of Shutting off Water in Oil and Gas Wells: by F. B. Tough. 1918. 122 pages, 20 plates, 7 figures. Price, 30 cents.

°Bulletin 169. Illinois Mining Statutes, Annotated: by J. W. Thompson. 1918. 594 pages. Price, 35 cents.

°Bulletin 170. Extinguishing and Preventing Oil and Gas Fires: by C. P. Bowie. 1918. 56 pages, 20 plates, 4 figures. Price, 20 cents.

°Bulletin 177. The Decline and Ultimate Production of Oil Wells, with Notes on the Valuation of Oil Properties: by C. H. Beal. 1919. 215 pages, 4 plates, 80 figures. Price, 30 cents.

°Bulletin 193. Analyses of Mine and Car Samples of Coal Collected in the Fiscal Years 1916 to 1919: by A. C. Fieldner, W. A. Selvig, and J. W. Paul. 1922. 391 pages, 2 figures. Price, 35 cents.

°Bulletin 194. Some Principles Governing the Production of Oil Wells: by C. H. Beal and J. O. Lewis. 1921. 58 pages, 2 plates, 8 figures. Price, 10 cents.

°Bulletin 195. Underground Conditions in Oil Fields: A. W. Ambrose. 1921. 238 pages, 23 plates, 43 figures. Price, 65 cents.

°Bulletin 201. Prospecting and Testing for Oil and Gas: by R. E. Collom. 1922. 170 pages, 6 plates, 12 figures. Price, 25 cents.

°Bulletin 206. Petroleum Laws of All America: by J. W. Thompson, 1921. 645 pages. Price, 40 cents.

°Bulletin 209. Fusibility of Ash from Coals in the United States: by W. A. Selvig and A. C. Fieldner. 1922. 119 pages, 2 plates, 3 figures. Price, 15 cents.

‡Bulletin 232. Manual for Oil and Gas Operations, Including Operating Regulations to Govern the Production of Oil and Gas under the Acts of February 25, 1920, June 4, 1920, March 4, 1923, and under Special Agreement by the United States; by T. E. Swigart and C. E. Beecher. 1923. 145 pages, 21 plates, 10 figures.

‡Bulletin 233. Protection of Oil and Gas Field Equipment against Corrosion: by R. Van A. Mills. 1925. 127 pages, 19 plates, 20 figures.

‡Bulletin 235. Mine Timber: Its Selection, Storage, Treatment and Utilization: by R. R. Horner and H. E. Tuft. 1925. 118 pages, 17 plates, 3 figures.

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*Edition exhausted. Consult public, technical, or university libraries.

°Obtainable only through the Superintendent of Documents, Government Printing Office, Washington, D. C., at the price indicated.

‡Order from Director of the Bureau of Mines, Washington, D. C.

NEW ‡Bulletin 243. Diamond Drilling as Applied in Oil-Field Development: by F. A. Edson. 1926. 170 pages, 39 figures.

°Bulletin 244. Fluorspar: Its Mining, Milling, and Utilization, with a Note on Cryolite: by Raymond B. Ladoo. 1927. 185 pages, 19 figures. Price, 35 cents.

‡Bulletin 247. Sources of Limestone, Gypsum, and Anhydrite for Dusting Coal Mines to Prevent Explosions: by Oliver Bowles. 1925. 70 pages, 15 plates.

NEW °Bulletin 250. Oil-Field Emulsions: by D. B. Dow. 1926. 112 pages, 41 figures. Price, 25 cents.

NEW °Bulletin 266. Technology and Uses of Silica and Sand: by W. M. Weigel. 1927. 199 pages. 50 figures. Price, 40 cents.

NEW °Bulletin 271. Problems in the Firing of Refractories: by G. A. Bole, John Blizard, W. E. Rice, E. P. Ogden, and R. A. Sherman. 1927. 197 pages, 56 figures. Price, 50 cents.

TECHNICAL PAPERS

°Technical Paper 16. Deterioration and Spontaneous Heating of Coal in Storage, a Preliminary Report: by H. C. Porter and F. K. Ovitz. 1912. 14 pages. Price 5 cents.

°Technical Paper 38. Wastes in the Production and Utilization of Natural Gas, and Methods for Their Prevention: by Ralph Arnold and F. G. Clapp. 1913. 29 pages, Price, 5 cents.

°Technical Paper 51. Possible Causes of the Decline of Oil Wells, and Suggested Methods of Prolonging Yields: by L. G. Huntley. 1913. 32 pages, 9 figures. Price 5 cents.

*Technical Paper 66. Mud-Laden Fluid Applied to Well Drilling: by J. A. Pollard and A. G. Heggem. 1914. 21 pages, 12 figures.

‡Technical Paper 76. Notes on the Sampling and Analyses of Coal: by A. C. Fieldner. 1914. 61 pages, 6 figures.

‡Technical Paper 133. Directions for Sampling Coal for Shipment or Delivery: by G. S. Pope. 1917. 15 pages, 1 plate.

°Technical Paper 172. Effects of Moisture on the Spontaneous Heating of Stored Coal: by S. H. Katz and H. C. Porter. 1917. 25 pages, 1 plate, 8 figures. Price, 5 cents.

°Technical Paper 199. Five Ways of Saving Fuel in Heating Houses: by Henry Kreisinger. 1918. 13 pages, 1 figure. Price, 5 cents.

°Technical Paper 235. Safe Storage of Coal: by H. H. Stoek. 1920. 10 pages. Price, 5 cents.

°Technical Paper 311. Factors in the Spontaneous Combustion of Coal: by O. P. Hood. 1922. 9 pages, 8 figures. Price, 5 cents.

‡Technical Paper 367. Value of Bituminous Coal and Coke for Generating Steam in a Low-Pressure Cast-Iron Boiler: by C. E. Augustine, James Neil and W. M. Myers, Jr., 1925. 45 pages, 1 plate, 19 figures.

NEW °Technical Paper 396. Low-Temperature Carbonization of Coal: by A. C. Fieldner. 1926. 44 pages, 40 figures. Price, 15 cents.

NEW ‡Technical Paper 402. Safety Rules for Installing and Using Electrical Equipment in Coal Mines; sponsored by United States Bureau of Mines and American Mining Congress. 1926. 21 pages.

NEW ‡Technical Paper 404. Identification of Oil-Field Waters by Chemical Analyses: by C. E. Reistle, Jr. 1927. 24 pages, 3 figures.

MINERAL RESOURCES

The Mineral Resources reports of the United States, which are published as annual reports, contain important matter relating to mineral resources or mineral technology or valuable bibliographies as well as data regarding the State's mineral production. Papers in these volumes relating especially to statistics on the various mineral resources are issued separately in pamphlet form. The latter include the latest available statistics. These may be secured by writing Director, United States Bureau of Mines, Washington, D. C.

For list of publications of the U. S. Bureau of Mines in cooperative agreement with the Illinois State Geological Survey, see page 32.

°Obtainable only through the Superintendent of Documents, Government Printing Office, Washington, D. C., at the price indicated.

*Edition exhausted. Consult public, technical, or university libraries.

‡Order from Director of the Bureau of Mines, Washington, D. C.

U. S. GEOLOGICAL SURVEY PUBLICATIONS

In part in Cooperation with the State Geological Survey.

A complete list of all the publications issued by the U. S. Geological Survey is obtainable on request from the Director, U. S. Geological Survey, Washington, D. C. Only publications referring to Illinois are listed here.

BULLETINS

*Bulletin 32. Lists and analyses of the mineral springs of the United States (a preliminary study): by A. C. Peale. 1886. 235 pages.

*Bulletin 58. The glacial boundary in western Pennsylvania, Ohio, Kentucky, Indiana, and Illinois: by G. F. Wright, with an introduction by T. C. Chamberlin. 1890. 112 pages, 8 plates.

*Bulletin 171. Boundaries of the United States and of the several States and Territories, with an outline of the history of all important changes of territory (second edition): by Henry Gannett. 1900. 142 pages, 53 plates. (See also Bulletins 226 and 689.)

°Bulletin 201. Results of primary triangulation and primary traverse, fiscal year 1901-2: by H. M. Wilson, J. H. Renshawe, E. M. Douglas, and R. U. Goode. 1902. 164 pages, 1 plate. Price, 10 cents.

*Bulletin 213. Contributions to economic geology, 1902: S. F. Emmons and C. W. Hayes, geologists in charge, 1903. Recent work in the coal fields of Indiana and Illinois, pages 284-293: by M. L. Fuller and G. H. Ashley.

°Bulletin 216. Results of primary triangulation and primary traverse, fiscal year 1902-3: by S. S. Gannett. 1903. 222 pages, 1 plate. Price, 20 cents.

*Bulletin 225. Contributions to economic geology, 1903; S. F. Emmons and C. W. Hayes, geologists in charge. 1904. 527 pages, 1 plate. Fluorspar deposits of southern Illinois, pages 505-511, by H. F. Bain.

*Bulletin 226. Boundaries of the United States and of the several States and Territories, with an outline of the history of all important changes of territory (third edition): by Henry Gannett. 1904. 145 pages, 54 plates (see also Bulletin 689).

*Bulletin 243. Cement materials and industry of the United States: by E. C. Eckel. 1905. 395 pages, 15 plates. (See also Bulletin 522.)

°Bulletin 245. Results of primary triangulation and primary traverse, fiscal year 1903-4: by S. S. Gannett. 1904. 328 pages, 1 plate. Price, 20 cents.

°Bulletin 246. Zinc and lead deposits of northwestern Illinois: by H. F. Bain. 1905. 56 pages, 5 plates. Price, 15 cents.

°Bulletin 255. The fluorspar deposits of southern Illinois: by H. F. Bain. 1905. 75 pages, 6 plates. Price, 15 cents.

°Bulletin 264. Record of deep-well drilling for 1904: by M. L. Fuller, E. F. Lines, and A. C. Veatch. 1905. 106 pages. Price, 10 cents.

°Bulletin 276. Results of primary triangulation and primary traverse, fiscal year 1904-5: by S. S. Gannett. 1905. 263 pages, 1 plate. Price 20 cents.

*Bulletin 285n. Glass-making materials. The requirements of sand and limestone for glass making, pages 452-458, and Glass sand of the middle Mississippi basin, pages 459-472: by E. F. Burchard. 1906.

°Bulletin 294. Zinc and lead deposits of the upper Mississippi Valley: by H. F. Bain. 1906. 155 pages, 16 plates. Price, 75 cents.

*Bulletin 298. Record of deep-well drilling for 1905: by M. L. Fuller and Samuel Sanford. 1906. 299 pages.

*Bulletin 302. The areas of the United States, the States, and the Territories: by Henry Gannett. 1906. 9 pages, 1 plate.

°Bulletin 310. Results of primary triangulation and primary traverse, fiscal year 1905-6: by S. S. Ganett. 1907. 248 pages, 1 plate. Price, 30 cents.

*Bulletin 316b. Coal fields of Illinois and Arkansas—Coal investigations in the Saline-Gallatin field, Ill., and adjoining area, pages 116-136: by F. W. DeWolf. 1907. Reprinted in State Geological Survey Bulletin 8 (pages 211-227).

°Bulletin 340h. Cement Materials—Concrete materials produced in the Chicago district: by E. F. Burchard, pages 383-410. Price, 5 cents. Reprinted in State Geological Survey Bulletin 8 (pages 345-372) with the addition of data on tests furnished by the Testing Division of the Bureau of Engineering of the City of Chicago.

°Bulletin 421. Results of spirit leveling in Illinois, 1896 to 1908, inclusive: by S. S. Gannett and D. H. Baldwin. 1910. 74 pages. (See also Bulletins 493, 553, and 672.) Price, 10 cents.

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*Edition exhausted. Consult public, technical, or university libraries.

°Obtainable only through the Superintendent of Documents, Government Printing Office, Washington, D. C., at the price indicated.

*Bulletin 438. Geology and mineral resources of the St. Louis quadrangle, Mo.-Ill.: by N. M. Fenneman. 1911. 73 pages, 6 plates.

°Bulletin 440. Results of triangulation and primary traverse for the years 1906, 1907, and 1908: by R. B. Marshall. 1910. 688 pages, 1 plate. Price, 50 cents.

*Bulletin 470g. Clay resources of the Murphysboro quadrangle, Illinois, pages 297-301: by E. W. Shaw. 1911.

°Bulletin 493. Results of spirit leveling in Illinois, 1909 and 1910: by R. B. Marshall. 1911. 115 pages, 1 plate. (See also Bulletins 421, 553, and 672.) Price, 10 cents.

*Bulletin 494. The New Madrid Earthquake: by M. L. Fuller. 1912. 119 pages, 10 plates.

°Bulletin 496. Results of triangulation and primary traverse for the years 1909 and 1910: by R. B. Marshall. 1912. 392 pages, 2 plates. Price, 30 cents.

°Bulletin 506. Geology and mineral resources of the Peoria quadrangle, Ill.: by J. A. Udden. 1912. 103 pages, 9 plates. Price, 25 cents.

*Bulletin 522. Portland cement materials and industry in the United States: by E. C. Eckel with contributions by E. F. Burchard and others. 1913. 401 pages, 19 plates.

*Bulletin 531m. Miscellaneous analyses of coal samples from various fields of the United States, pages 331-335. 1913.

*Bulletin 541k. Analyses of coal samples from various fields of the United States, pages 491-526: by M. R. Campbell. 1914.

°Bulletin 551. Results of triangulation and primary traverse, 1911 and 1912: by R. B. Marshall. 1914. 396 pages, 2 plates. Price, 30 cents.

°Bulletin 553. Results of spirit leveling in Illinois, 1911 to 1913, inclusive: by R. B. Marshall. 1914. 110 pages, 1 plate. (See also Bulletins 421, 493 and 672.) Price, 10 cents.

*Bulletin 585. Useful minerals of the United States: compiled by Samuel Sanford and R. W. Stone, 1914. 250 pages. (See also Bulletin 624.)

*Bulletin 624. Useful minerals of the United States: compiled by F. C. Schrader, R. W. Stone, and Samuel Sanford (a revision of Bulletin 585). 1916. 412 pages.

*Bulletin 641L. Oil resources of black shales of the eastern United States: by G. H. Ashley, pages 311-324. 1917.

°Bulletin 644e. Primary traverse in Illinois, Wisconsin, Minnesota, North Dakota, and South Dakota, 1913-1915: by R. B. Marshall, pages 225-296. 1916. Price, 5 cents.

°Bulletin 672. Spirit leveling in Illinois, 1914 to 1917, inclusive: by R. B. Marshall. 1918. 108 pages, 1 plate. (See also Bulletins 421, 493, and 553.) Price, 10 cents.

°Bulletin 689. Boundaries, areas, geographic centers, and altitudes of the United States and of the several States, with a brief record of important additions to their territory: by E. M. Douglas. 1923. 234 pages, 7 plates. Price, 50 cents.

*Bulletin 691b. Results of dry distillation of miscellaneous shale samples: by D. E. Winchester, pages 51-55. 1918.

°Bulletin 701. Geothermal data of the United States: by N. H. Darton, page 37. 1920. Price, 20 cents.

°Bulletin 708. High grade clays of the eastern United States: by H. Ries, W. S. Bayley, and others, page 284. 1922. Price, 60 cents.

°Bulletin 709e. Primary traverse in Illinois and Wisconsin, 1916-1918: by C. H. Birdseye, pages 167-186. 1923. Price, 5 cents.

°Bulletin 728. Occurrence and uses of peat in the United States: by E. K. Soper and C. C. Osbon, page 104. 1922. Price, 50 cents.

*Bulletin 731. Bibliography of North American geology for 1919-1920: by J. M. Nickles. 1922. 282 pages.

°Bulletin 746. Geological literature on North America, 1785-1918: by J. M. Nickles, Part I, Bibliography, pages 251-258. 1924. Price, $1.25.

°Bulletin 747. Geologic literature on North America, 1785-1918: by J. M. Nickles, Part II. Index. 1924. Price, 65 cents.

°Bulletin 758. Bibliography of North American geology for 1921-1922: by J. M. Nickles. 1924. 273 pages. Price, 25 cents.

°Bulletin 784. Bibliography of North American geology for 1923-1924: by J. M. Nickles. 1927. 280 pages. Price, 40 cents.

NEW °Bulletin 802. Bibliography of North American geology for 1925-1926: by J. M. Nickles. 1928. 286 pages. Price, 40 cents.

WATER SUPPLY PAPERS

*Water Supply Paper 44. Profiles of rivers in the United States: by Henry Gannett. 1901. Gives profiles of Mississippi, Rock, Illinois, Ohio, and Wabash rivers.

°Obtainable only through the Superintendent of Documents, Washington, D. C. Consult public, technical, or university libraries.

*Edition exhausted. Consult public, technical, or university libraries.

*Water Supply Paper 57. Preliminary list of deep borings in the United States, Part I (Alabama-Montana): by N. H. Darton. 1902. 60 pages. Contains data on deep wells, pages 25-30.

*Water Supply Paper 67. The motions of underground waters: by Charles S. Slichter. 1902. Contains data on artesian wells at Rockford, 106 pages, 50 figures, 8 plates.

*Water Supply Paper 114. Underground waters of eastern United States: M. L. Fuller, geologist in charge. 1905. See Illinois, by Frank Leverett, pages 248-257.

*Water Supply Paper 149. Preliminary list of deep borings in the United States (second edition with additions): by N. H. Darton. 1905. Contains data on deep wells, pages 30-38. 175 pages.

°Water Supply Paper 164. Underground waters of Tennessee and Kentucky west of Tennessee River, and an adjacent area in Illinois: by L. C. Glenn. 1916. 173 pages, 7 plates. Price, 25 cents.

°Water Supply Paper 239. The quality of the surface waters of Illinois: by W. D. Collins. 1910. 94 pages, 3 plates. Price, 10 cents.

°Water Supply Paper 280. Gaging Stations maintained by U. S. Geological Survey, 1888-1910, and Survey publications relating to water resources: by B. D. Wood. Contains list of gaging stations, and references to reports giving stream measurements from 1884 to 1910. Price, 10 cents.

For stream measurements subsequent to 1910, see Water Supply Papers: °303, 10 cents; °305, 15 cents; °323, 10 cents; °325, 25 cents; °353, 20 cents; °364, 5 cents; °383, 10 cents; °385, 15 cents; °403, 15 cents; °405, 20 cents; °433, 20 cents; °435, 15 cents; °453, 15 cents; °454, 15 cents; °455, 20 cents; °473, 10 cents; °474, 15 cents; °475, 20 cents; °503, 25 cents; °504, 20 cents; °505, 30 cents; °523, 30 cents; °525, 20 cents; °543, 25 cents; °545, 25 cents; °563, 25 cents.

°Water Supply Paper 364. Water analyses from the laboratory of the United States Geological Survey: tabulated by F. W. Clarke, 1914. Contains analyses of 1 spring water, and 5 well waters, Illinois, pages 13-14. 40 pages. Price, 5 cents.

°Water Supply Paper 489. Occurrence of ground water in the United States: by O. E. Meinzer. 1923. 321 pages, 31 plates, 110 figures. Price, 60 cents.

°Water Supply Paper 494. Outline of ground water hydrology: by O. E. Meinzer. 1923. Contains definitions and explanations of ground water terminology. 71 pages, 35 figures. Price, 15 cents.

°Water Supply Paper 496. The industrial utility of public water supplies in the United States: by W. D. Collins. 1923. Contains analyses from supplies, discusses sources and treatment. 59 pages, 1 plate, 1 figure. Price, 10 cents.

°Water Supply Paper 503. Surface water supply of the United States, 1919-1920, Part III, Ohio River Basin: by N. C. Grover, Chief Hydraulic Engineer, and O. W. Hartwell, G. C. Stevens, W. E. Hall, W. P. King, and C. G. Paulsen, District Engineers. 1924. Contains data on Wabash River Basin, Illinois. 257 pages, 2 plates. Price, 25 cents.

°Water Supply Paper 505. Surface water supply of the United States, 1919 and 1920, Part V. Hudson Bay and upper Mississippi River Basins: by N. C. Grover, Chief Hydraulic Engineer, W. A. Lamb and W. G. Hoyt, District Engineers, 1923. Contains data on Illinois River at Morris and Peoria. 287 pages, 2 plates. Price, 30 cents.

°Water Supply Paper 523. Surface water supply of the United States, 1921, Part III, Ohio River Basin: by N. C. Grover, Chief Hydraulic Engineer, O. W. Hartwell, A. H. Horton, Lasley Lee, H. E. Grosbach, W. E. Hall, and W. R. King, District Engineers. 1925. Contains data on the Wabash River basin, 316 pages, 2 plates, price, 30 cents.

°Water Supply Paper 525. Surface water supply of the United States, 1921, Part V, Hudson Bay and upper Mississippi River Basins; by N. C. Grover, Chief Hydraulic engineer, W. A. Lamb, S. P. Soule, H. E. Grosbach, and E. D. Burchard, District Engineers 1924. Contains data on Illinois River at Beardstown, Morris and Peoria. 191 pages, 2 plates. Price, 20 cents.

°Water Supply Paper 560. Contributions to the hydrology of the United States: by Nathan C. Grover. 1925. Contains an index of analyses of natural waters in the United States. 134 pages, 2 plates, 8 figures. Price, 5 cents.

°Water Supply Paper 563. Surface water supply of the United States, 1923, Part III, Ohio River Basin: by Nathan C. Grover, A. H. Horton, Lasley Lee, H. E. Grosbach, W. R. King, and W. E. Hall. 1926. 258 pages. Price, 25 cents.

°Water Supply Paper 565. Surface water supply of the United States, 1923, Part V, Hudson Bay and Upper Mississippi River Basins: by Nathan C. Grover, W. A. Lamb, L. B. Soulé, J. B. Spiegel, H. E. Grosbach, E. L. Williams, and H. C. Beckman. 1926. 199 pages, 3 plates. Price, 30 cents.

°Water Supply Paper 583. Surface water supply of the United States, 1924, Part III, Ohio River Basin: by Nathan C. Grover, A. H. Horton, Lasley Lee, H. E. Grosbach, W. R. King, W. E. Hall, and E. D. Burchard. 1927. 298 pages, 1 plate. Price, 35 cents.

°Water Supply Paper 585. Surface water supply of the United States, 1925, Part V, Hudson Bay and Upper Mississippi River Basins: by Nathan C. Grover, W. A.

°Obtainable only through the Superintendent of Documents, Washington, D. C. Consult public, technical, or university libraries.

*Edition exhausted. Consult public, technical, or university libraries.

Lamb, S. B. Soulé, J. B. Spiegel, H. E. Grosbach, and H. C. Beckman. 1928. 185 pages, 1 figure. Price, 25 cents.

°**Water Supply Paper 596.** Contributions to the hydrology of the United States, 1927: by Nathan C. Grover. 1928. 266 pages, 14 plates, 34 figures.

MONOGRAPH

°**38.** The Illinois glacial lobe, by Frank Leverett, 1899. 817 pages, 24 plates. Price, $1.60.

ANNUAL REPORTS

°Seventeenth Annual Report of the United States Geological Survey, 1895-96. Part II, Section h: The water resources of Illinois, by Frank Leverett, pages, 695-849, 1896. Price, $2.35.

°Eighteenth Annual Report of the United States Geological Survey, 1896-97. Part I, Section b: Triangulation and spirit leveling: by H. M. Wilson, J. H. Renshawe, E. M. Douglas, and R. U. Goode, pages 131-422, plates II-IV. Price, $1.00.

°Nineteenth Annual Report of the United States Geological Survey, 1897-98. Part I, Section b: Triangulation and spirit leveling: by H. M. Wilson, J. H. Renshawe, E. M. Douglas, and R. U. Goode, pages 145-408. Price $1.00.

°Twentieth Annual Report of the United States Geological Survey, 1898-99. Part I. Section b: Triangulation and spirit leveling: by H. M. Wilson, J. H. Renshawe, E. M. Douglas, and R. U. Goode, pages 211-530. Price $1.00.

*Twenty-second Annual Report of the United States Geological Survey, 1900-1901. Charles D. Walcott, Director. 1901. (Parts III and IV, 1902.) The eastern interior coal field, pages 265-305.

PROFESSIONAL PAPER

*11. The clays of the United States east of the Mississippi River: by Heinrich Ries. 1903. 298 pages, 9 plates.

---

*Edition exhausted. Consult public, technical, or university libraries.

°Obtainable only through the Superintendent of Documents, Washington, D. C. Copies can be found in public, technical, or university libraries.

MISCELLANEOUS PUBLICATIONS

The following papers in other publications are based on data of the Illinois State Geological Survey. Only those papers marked with an asterisk (*) are available from the Chief, Illinois State Geological Survey, Urbana, Illinois. The other papers, published in periodicals, Journals, Transactions, and Bulletins, are available for reference in any large public, technical, or university library, or, in some cases, separates may be obtained from the authors.

Miscellaneous reports available are marked with the price and the place where they may be purchased.

1906

The Southeastern Illinois Oil Field: by H. Foster Bain. Mining and Scientific Press, vol. 92, 1906.

The Coals of Illinois: by S. W. Parr. Engineering and Mining Journal, vol. 81, 1906.

1907

Work of the State Geological Survey: by H. Foster Bain. Journal of the Western Society of Engineers, vol 12, 1907.

Petroleum in Illinois: by H. Foster Bain. Engineering and Mining Journal, vol. 83, 1907.

The Paleontology of the Niagaran Limestone in the Chicago Area; the Trilobita: by Stuart Weller. Bulletin Chicago Academy of Science, N. H. S., vol 4, 1907.

The Pre-Richmond Unconformity in the Mississippi Valley: by Stuart Weller. Journal of Geology, vol. 15, 1907.

1908

Occurrence of Oil and Gas in Eastern Illinois: by H. Foster Bain. Transactions Illinois State Academy of Science, vol. 1, 1908. (Decatur meeting, February, 1908.)

Geology of Illinois Petroleum Fields: by H. Foster Bain. Economic Geology, vol. 3, 1908.

On the Lower Paleozoic Stratigraphy of Southwestern Illinois: by T. E. Savage. American Journal of Science, vol 25, May, 1908.

The Coal Resources of Illinois: by F. W. DeWolf. Bulletin American Institute of Mining Engineers, vol 24, 1908.

1909

Clay Seams in Number Five Coal Bed, Springfield: by T. E. Savage. Transactions Illinois State Academy of Science, vol 2, 1909. (Springfield meeting, February, 1909); Economic Geology, vol 5. 1910.

The Ordovician and Silurian Formations in Alexander County, Illinois: by T. E. Savage. American Journal of Science, 4th ser., vol. 28, 1909.

Drilling for Oil in Eastern Illinois: by R. S. Blatchley. Mining and Scientific Press, vol. 99, 1909.

Work of the State Geological Survey: by Frank DeWolf. Transactions Illinois State Academy of Science, vol 2, 1909. (Springfield meeting, February, 1909.)

Correlation of the Middle and Upper Devonian and the Mississippian Faunas of North America: by Stuart Weller. Journal of Geology, vol 17, 1909.

1910

The Grand Tower (Onondaga) Formation of Illinois and its Relation to the Jeffersonville Beds of Indiana: by T. E. Savage. Transactions Illinois State Academy of Science, vol. 3, 1910. (Urbana meeting, February, 1910.)

Internal Characters of Some Mississippian Rhynchonelliform Shells: by Stuart Weller. Bulletin Geological Society America, vol. 21, 1910.

The fauna of the Girardeau Limestone and of the Edgwood Formation (abstract): by T. E. Savage. Science, new ser., vol. 32, 1910.

1911

Geology of Franklin and Williamson Counties, Illinois: by F. W. DeWolf, Black Diamond, vol. 46, 1911.

Coal Geology of the Herrin Quadrangle in Illinois: by T. E. Savage. Black Diamond, vol. 46, No. 10, 1911.

Geology of the Herrin Quadrangle [Illinois]: by T. E. Savage, Mines and Minerals, vol. 31, 1911.

Genera of Mississippian Loop-Bearing Brachiopoda: by Stuart Weller. Journal of Geology, vol. 19, 1911.

1912

Oil Investigations in Illinois: by R. S. Blatchley. Transactions Illinois State Academy of Science, vol. 4, 1912 (Chicago meeting, February, 1911.)

The Channahon and Essex Limestones in Illinois: by T. E. Savage. Transactions Illinois State Academy of Science, vol. 4, 1912. (Chicago meeting, February, 1911.)

An Eastward Extension of the Sweetland Creek Shale in Illinois: by J. A. Udden. Transactions Illinois State Academy of Science, vol. 4, 1912. (Chicago meeting, February, 1911.)

Illinois Mining and State Geological Survey: by F. W. DeWolf. Illinois Society of Engineers, Annual Report 27, 1912.

The Illinois Petroleum Fields: by R. S. Blatchey. Bulletin American Geographical Society, vol. 44, 1912.

Illinois Oil Industry, its History and Development: by R. S. Blatchley. Mining and Engineering World, vol 36, 1912.

The Structural Relations of the Oil Fields of Crawford and Lawrence Counties, Illinois: by R. S. Blatchley. Transactions Illinois State Academy of Science, vol, 5, 1912. (Bloomington meeting, February, 1912.)

Geological Sequence in the Vicinity of La Lalle as Revealed by Recent Drilling: by Gilbert H. Cady. Transactions Illinois State Academy of Science, vol. 5, 1912. (Bloomington meeting, February, 1912.)

1913

The Illinois Coal Fields: by A Bement. Coal Age, vol 3, 1913.

Some Partly Dissected Plains in Jo Daviess County, Illinois: by A. C. Trowbridge. The Journal of Geology, vol. 21, 1913.

Some Interesting New Species of Arthropods from Devonian Strata of Illinois: by T. E. Savage. American Journal of Science, 4th ser., vol. 35, 1913.

The Sexton Creek Limestone in Illinois: by T. E. Savage. Transactions Illinois State Academy of Science, vol. 6, 1913. (Peoria meeting, February, 1913.)

The Stratigraphy of the Chester Group in Southern Illinois: by Stuart Weller. Transactions Illinois State Academy of Science, vol. 6, 1913. (Peoria meeting, February, 1913.)

The Study of Deep Well Drilling in Illinois: by T. E. Savage. Proceedings Illinois Water Supply Association, vol. 5, 1913.

Alexandrian Series in Missouri and Illinois: by T. E. Savage. Bulletin Geological Society America, vol. 24, 1913.

1914

Work of the State Geological Surveys: by Frank W. DeWolf. Mining and Scientific Press, January 3, 1914.

The Relations of the Alexandrian Series in Illinois and Missouri to the Silurian Section of Iowa: by T. E. Savage. American Journal of Science, 4th ser., vol 38, 1914.

1915

Investigations of Mineral Resources and Industries of the United States: by F. W. DeWolf. Transactions Illinois State Academy of Science, vol. 7, 1915. (Evanston meeting, February, 1914.)

Conditions under which the Vegetable Matter of the Illinois Coal Beds Accumulated: by T. E. Savage. Transactions Illinois State Academy of Science, vol. 7, 1915. (Evanston meeting, February, 1914.)

Artesian Waters in Chicago and Surrounding Territory: by F. W. DeWolf and C. B. Anderson. 30th Annual Report, Illinois Society of Engineers, 1915.

1916

The Loess in Illinois; Its Age and Origin: by T. E. Savage. Transactions Illinois State Academy of Science, vol 8, 1916. (Springfield meeting, February, 1915.)

Alexandrian Rocks of Northeastern Illinois and Eastern Wisconsin: by T. E. Savage. Bulletin Geological Society America, vol. 27, 1916.

Atactocrinus, a New Crinoid Genus from the Richmond of Illinois: by Stuart Weller. Chicago University, Walker Museum, Contribution 1, 1916.

Description of a Ste. Genevieve Limestone Fauna from Monroe County, Illinois: by Stuart Weller. Chicago University, Walker Museum, Contribution 1, 1916.

Former Extension of the Devonian Formations in Southeastern Missouri (abstract): by Stuart Weller. Bulletin Geological Society America, vol. 27, 1916.

Stratigraphic and Faunal Succession of the Chester Group in Illinois and Kentucky (abstract): by Stuart Weller. Bulletin Geological Society America, vol. 27, 1916.

1917

Present Condition of the Oil Industry: by Fred H. Kay. Transactions Illinois State Academy of Science, vol 9, 1917. (Urbana meeting, February, 1916.)

Lateral Erosion in the Upper Illinois Valley, by the Chicago Outlet, Abstract: by Gilbert H. Cady. Transactions Illinois State Academy of Science, vol. 9, 1917. (Urbana meeting, February, 1916.)

The New Richmond Sandstone of Northern Illinois, Abstract: by Gilbert H. Cady. Transactions Illinois State Academy of Science, vol. 9, 1917. (Urbana meeting, February, 1916.)

Oil Fields of Illinois: by F. H. Kay. Bulletin Geological Society America, vol. 28, 1917.

1918

The Thebes Sandstone and Orchard Creek Shale and their Faunas in Illinois: by T. E. Savage. Transactions Illinois State Academy of Science, vol 10, 1918. (Galesburg meeting, February, 1917.)

Starved Rock State Park and its Environs, Geology: by Gilbert H. Cady. Geographical Society of Chicago. Bull. 6. 1918.

1919

Valuable Pyrite in Illinois Coal Beds: by G. H. Cady. Coal Age, vol. 16, 1919.

1920

The Illinois Pyrite Inventory: National Sulphur Situation in the Spring of 1918: by G. H. Cady. Transactions Illinois State Academy of Science, vol. 12, 1920. (Jacksonville meeting, March, 1919.)

*The Use of Central District Coals in Water-Gas Manufacture: by W. A. Dunkley. Transactions Illinois State Academy of Science, vol. 12, 1920. (Jacksonville meeting, March, 1919.)

The Outlook for Geology and Geography: by F. W. DeWolf. Transactions Illinois State Academy of Science, vol. 12, 1920. (Jacksonville meeting, March, 1919.)

The Chester Series of Illinois: by Stuart Weller. Journal of Geology, vol. 28, Nos. 4 and 5, 1920.

A New Trenton Field in Illinois: by F. W. DeWolf and L. A. Mylius. Bulletin of the American Association of Petroleum Geologists, vol. 4, No. 1, 1920.

The Illinois Security Law: by F. W. DeWolf. Bulletin of the American Association of Petroleum Geologists, vol. 4, No. 2, 1920.

The Devonian Formations of Illinois: by T. E. Savage, American Journal of Science, 4th ser., vol. 49, March, 1920.

Low-Sulphur Coal in Illinois: by G. H. Cady. American Institute Mining and Metallurgical Engineers Bull. No. 151, July, 1919; Transactions, vol. 63, 1920. Discussion, Mining and Metallurgy, No. 157, January, 1920.

Gravel and Limestone in Illinois: by F. W. DeWolf. 35th Annual Report Illinois Society of Engineers, 1920.

Gravel Deposits of Illinois: by M. M. Leighton. 35th Annual Report Illinois Society of Engineers, 1920.

Present Status of the Pleistocene in Illinois (abstract): by M. M. Leighton. Science new ser., vol. 51, 1920.

Animal Life in Loess Deposits near Alton, Illinois, with descriptions of two new varieties of land shells from the same deposits: by F. C. Baker. Nautilus, vol. 34, No. 2, 1920.

1921

Geology, Distribution and Occurrence of Potash Bearing Shales of Union County: by Frank Krey. Illinois Agricultural Experiment Station. Bull. 232, 1921.

Post-Illinoian Drift in Northern Illinois West of the Mapped Wisconsin Moraine, Abstract: by Morris M. Leighton. Bulletin Geological Society America, vol. 32, 1921.

The Pleistocene Succession near Alton, Illinois, and the Age of the Mammalian Fossil Fauna: by Morris M. Leighton. Journal of Geology, vol. 29, No. 6, 1921.

Some Structural and Stratigraphic Features Affecting Relative Amounts of Oil Production in Illinois: by D. M. Collingwood. Bulletin of the American Association of Petroleum Geologists, vol. 5, No. 2, 1921.

Illinois is Proud of its Mineral Deposits: by Frank W. DeWolf. Illinois Journal of Commerce, October, 1921.

Potash Shales of Illinois (abstract): by M. M. Austin and S. W. Parr. Science, new ser., vol. 53, 1921.

New Forms of Pleistocene Mollusks from Illinois: by F. C. Baker. The Nautilus, vol. 35, No. 1, 1921.

1922

The Glacial History of the Sangamon River Valley at Decatur and its Bearing on the Reservoir Project: by Morris M. Leighton. Transactions Illinois State Academy of Science, vol. 14, 1922. (Carbondale meeting, April, 1921.)

Some Events in the Geological History of Southern Illinois: by Stuart Weller. Transactions Illinois State Academy of Science, vol. 14, 1922. (Carbondale meeting, April, 1921.)

New Species of Devonian Fossils from Western Illinois: by T. E. Savage. Transactions Illinois State Academy of Science, vol. 14, 1922. (Carbondale meeting, April, 1921.)

---

*Separates available upon request from the Chief, State Geological Survey, Urbana, Illinois.

Work of the Illinois State Geological Survey: by James H. Hance. Transactions Illinois State Academy of Science, vol. 14, 1922. (Carbondale meeting, April, 1921.)

Stratigraphy of the Southern Half of the LaSalle Anticline: by L. A. Mylius. Transactions Illinois State Academy of Science, vol. 14, 1922. (Carbondale meeting, April, 1921.)

The Present State of Paleobotany in Illinois: by A. C. Noé. Transactions Illinois State Academy of Science, vol. 15, 1922. (Rockford meeting, April, 1922.)

Fossil Flora of Braidwood, Illinois: by A. C. Noé. Transactions Illinois State Academy of Science, vol. 15, 1922. (Rockford meeting, April, 1922.)

Further Data on the Differentiation of the Glacial Drift Sheets of Northern Illinois, Abstract: by Morris M. Leighton. Bulletin Geological Society America, vol. 33, 1922.

Note on the Occurrence of Fusulinas in the Pennsylvanian Rocks of Illinois: by H. E. Culver. Transactions Illinois State Academy of Science, vol. 15, 1922. (Rockford meeting, April, 1922.)

Notes on the Waterloo Anticline: by J. E. Lamar. Transactions Illinois State Academy of Science, vol. 15, 1922. (Rockford meeting, April, 1922.)

Pleistocene Molluska from Northwestern and Central Illinois: by F. C. Baker. Journal of Geology, vol. 30, No. 1, 1922.

Refractory Clay of Illinois: by C. W. Parmelee. Journal American Ceramic Society, vol. 5, No. 10, 1922.

1923

Relations of Topographic and Geologic Mapping of Illinois to Professional Engineering: by F. W. DeWolf. Journal Western Society of Engineers, vol. 27, No. 1, 1923.

Modern Geology and Its Contribution to Engineering: by M. M. Leighton. Journal Western Society of Engineers, vol. 27, No. 11, 1923.

The Differentiation of the Drift Sheets of Northwestern Illinois: by M. M. Leighton. Journal of Geology, vol. 31, No. 4, 1923.

Geology and the Decatur Dam and Reservoir Project: by Morris M. Leighton. Engineering News Record, vol. 91, No. 7, 1923.

The Use of the Microscope in the Study of Subsurface Stratigraphy: by J. E. Lamar. Transactions Illinois State Academy of Science, vol. 16, 1923. (Galesburg meeting, May, 1923.)

The Origin of the Cahokia Mounds: by Morris M. Leighton. Transactions Illinois State Academy of Science, vol. 16, 1923. (Galesburg meeting, May, 1923.)

The Cahokia Mounds. Some Geological Aspects: by Morris M. Leighton. Vol. 21, No. 6, University of Illinois Bulletin, 1923. Obtainable from the University of Illinois, Urbana, Illinois. Price, $1.50.

***Oil Production in Illinois:** by D. M. Collingwood. Transactions Illinois State Academy of Science, vol. 16, 1923. (Galesburg meeting, May, 1923.)

A Paleozoic Angiosperm: by A. C. Noé. Journal of Geology, vol. 31, No. 4, 1923.

A Paleozoic Angiosperm from an American Coal Ball: by J. Hobart Hoskins. The Botanical Gazette, vol. 75, No. 4, 1923.

Pleistocene in Northwestern Illinois: a graphic presentation of some of the chief lines of evidence (abstract): Fossilliferous loess beneath tilted Galena beds at the border of the Belvidere lobe in northwstern Illinois (abstract): by M. M. Leighton. Bulletin Geological Society America, vol. 34, No. 1, 1923.

Oil Developments of 1922 in Illinois: by D. M. Collingwood. Bulletin of the American Association of Petroleum Geologists, vol. 7, No. 1, 1923.

The Paleontologist's View of Evolution: by T. E. Savage. Transactions Illinois State Academy of Science, vol. 16, 1923.

Paleozoic Rocks found in Deep Wells in Wisconsin and Northern Illinois: by F. T. Thwaites. Journal of Geology, vol. 31, No. 7, 1923; abstract, Bulletin Geological Society America, vol. 34, No. 1, 1923.

Pleistocene Deposits in Lawrence County: by F. W. Cox. Transactions Illinois State Academy of Science, vol. 16, 1923.

Coal Balls: by A. C. Noé. Science, new ser., vol. 57, 1923.

1924

Pennsylvanian Correlation in Northwestern Illinois: by H. E. Culver. Bulletin Geological Society America, vol. 35, 1924.

***The Future of Water Reservoir Projects in Illinois and their Relationship to Geologic Data:** by M. M. Leighton. Journal of the American Water Works Association, vol. 2, No. 4, July, 1924.

Half the Counties in Illinois Coal Producers: by M. M. Leighton. Illinois Journal of Commerce, October, 1924.

---

*Separate available upon request from the Chief, State Geological Survey, Urbana, Illinois.

Richmond Rocks of Iowa and Illinois: by T. E. Savage. American Journal of Science, 5th ser., vol. 8, 1924.

Oriskany Limestone in Illinois (abstract): by T. E. Savage. Bulletin Geological Society America, vol. 35, No. 1, 1924.

Marine Invertebrate Fossils as Horizon Markers in the Pennsylvanian Rocks of Illinois: by T. E. Savage. Journal of Geology, vol. 32, No. 7, 1924.

1925

***The Glacial History of the Elgin Region:** by M. M. Leighton. Transactions Illinois State Academy of Science, vol. 17, 1925. (Elgin meeting, May, 1924.)

Outline of the Geology of the Oregon Quadrangle: by Arthur Bevan. Transactions Illinois State Academy of Science, vol. 17, 1925. (Elgin meeting, May, 1924.)

***Some Questions in Petroleum Geology which are Suggested by Oil Occurrences in Crawford County, Pennsylvanian Beds:** by James H. Hance. Transactions Illinois State Academy of Science, vol. 17, 1925. (Elgin meeting, May, 1924.)

Paleozoic Karst Topography: by George E. Ekblaw. Transactions Illinois State Academy of Science, vol. 17, 1925. (Elgin meeting, May, 1924.)

The Correlation of the Maquoketa and Richmond Rocks of Iowa and Illinois: by T. E. Savage. Transactions Illinois State Academy of Science, vol. 17, 1925. (Elgin meeting, May, 1924.)

Coal Balls Here and Abroad: by A. C. Noé. Transactions Illinois State Academy of Science, vol. 17, 1925. (Elgin meeting, May, 1924.)

Glacial Phenomena in the Vicinity of Carbondale: by J. E. Lamar. Transactions Illinois State Academy of Science, vol. 17, 1925. (Elgin meeting, May, 1924.)

***Glacial Kankakee Torrent in Northeastern Illinois:** by George E. Ekblaw and L. F. Athy. Bulletin Geological Society America, vol. 36, 1925.

***Petroleum Development in Illinois during 1924:** by Gail F. Moulton. The American Institute of Mining and Metallurgical Engineers, New York meeting, February, 1925.

The Devonian Strata of the Alto Pass Quadrangle: by C. F. Bassett. Transactions Illinois State Academy of Science, vol. 18, 1925. (Springfield meeting, February, 1925.)

The Character and Significance of the Basal Conglomerate of the Pennsylvanian System in Southern Illinois: by R. S. Poor. Transactions Illinois State Academy of Science, vol. 18, 1925. (Springfield meeting, February, 1925.)

An Occurrence of Transitional Beds between the St. Peter Sandstone and the Platteville Limestone: by Arthur Bevan. Transactions Illinois State Academy of Science, vol. 18, 1925. (Springfield meeting, February, 1925.)

Post-Chester, Pre-Pennsylvanian Faulting in the Alto Pass area: by George E. Ekblaw. Transactions Illinois State Academy of Science, vol. 18, 1925. (Springfield meeting, February, 1925.)

***A Type Pleistocene Section—The Farm Creek Exposure Near Peoria, Illinois:** by M. M. Leighton. Transactions Illinois State Academy of Science, vol. 18, 1925. (Springfield meeting, February, 1925.) (Reprinted in Report of Investigations No. 11.)

Comparison of the Devonian Rocks of Illinois and Missouri: by T. E. Savage. Transactions Illinois State Academy of Science, vol. 18, 1925. (Springfield meeting, February, 1925.)

***The Oolite of the Ste. Genevieve Formation:** by J. E. Lamar. Transactions Illinois State Academy of Science, vol. 18, 1925. (Springfield meeting, February, 1925.) (Reprinted as Report of Investigations No. 10.)

The Fossil Flora of Northern Illinois: by A. C. Noé. Transactions Illinois State Academy of Science, vol. 18, 1925. (Springfield meeting, February, 1925.)

The Oriskany Limestone in Illinois: by T. E. Savage. American Journal of Science, 5th ser., vol. 10, 1925.

Problematic Fossil from the Silurian of Illinois (abstract): by T. E. Savage. Bulletin Geological Society America, vol. 36, No. 1, 1925.

A New Type of Silurian Worm: by Stuart Weller. Journal of Geology, vol. 33, No. 5, 1925.

1926

***Petroleum Development in the Mississippi Valley Region during 1925:** by Gail F. Moulton. Read before the American Institute of Mining and Metallurgical Engineers. (Washington meeting, February, 1926.)

Pre-Illinoian Till in Southern Illinois: by Paul Mac Clintock. Journal of Geology, vol. 34, 1926. (Reprinted in Report of Investigations No. 11.)

Some Geologists' Work with the Oil Operators: by M. M. Leighton. Illinois Journal of Commerce, May, 1926.

Mineral Industry a Leader in LaSalle County: by M. M. Leighton. Illinois Journal of Commerce, June, 1926.

---

*Separate available upon request from the Chief, State Geological Survey, Urbana, Illinois.

The Flora of an Illinois Coal Ball: by Fredda D. Reed. The Botanical Gazette, vol. 81, No. 4, 1926.

Structure of Pennsylvanian Plants from Illinois: by J. N. Hoskins. Botanical Gazette, vol. 82, No. 4, 1926.

Correlation of Illinois Coals (abstract): by H. E. Culver. Pan-American Geologist, vol. 45, No. 3, 1926.

The Areal Geology of Saline County: by G. H. Cady. Transactions Illinois State Academy of Science, vol. 19, 1926. (Harrisburg meeting, April-May, 1926.)

The Fossil Flora of Harrisburg, Illinois: by A. C. Noé. Transactions Illinois State Academy of Science, vol. 19, 1926. (Harrisburg meeting, April-May, 1926.)

Glacial Geology and Engineering in Illinois: by M. M. Leighton. Transactions Illinois State Academy of Science, vol. 19, 1926. (Harrisburg meeting, April-May, 1926.)

Silurian Rocks of Illinois: by T. E. Savage. Bulletin Geological Society America, vol. 37, No. 4, 1926; Pan-American Geologist, vol. 45, No. 2, 1926; Transactions Illinois State Academy of Science, vol. 19, 1926. (Harrisburg meeting, April-May, 1926.)

Sedimentary Analysis of the Limestones of the Chester Series: by J. E. Lamar. Economic Geology, vol. 21, No. 6, 1926.

Geological Columnar Section at Monmouth, Illinois, as Revealed by the New Deep Wells: by L. E. Workman. Transactions Illinois State Academy Science, vol. 19, 1926. (Harrisburg meeting, April-May, 1926.)

Bowmanville Low-water Stages of Glacial Lake Chicago: by Frank C. Baker. Science, vol. 64, No. 1654, p. 249, Sept. 10, 1926.

1927

Petroleum Developments in the Mississippi Valley Region during 1926: by Gail F. Moulton. "Petroleum and Technology in 1926," pp. 695-703, published by American Institute Mining and Metallurgical Engineers, 1927.

Economic Geology of the St. Peter Sandstone of Illinois: by J. E. Lamar. Illinois Engineer, vol. 3, No. 5, 1927.

Economic Geology of the Limestones of Illinois: by J. E. Lamar. Rock Products, vol. 30, No. 8, 1927.

New Facts concerning the St. Peter Sandstone of Illinois: by J. E. Lamar. Bulletin Geological Society America, vol. 38, 1927.

Sewage Disposal at Alton: by J. E. Lamar. Engineering-News Record, vol. 99, No. 16, pp. 642-643, 1927.

Descriptions of New Forms of Pleistocene Land Mollusks from Illinois with Remarks on Other Species: by Frank C. Baker. The Nautilus, vol. 40, No. 4, pp. 114-120, 1927.

Significant Breaks and Overlaps in the Pennsylvanian Rocks of Illinois: by T. E. Savage. American Journal of Science, vol. 14, 1927; abstract, Bulletin Geological Society America, vol. 38, No. 1, 1927.

Stratigraphy and Paleontology of the Pennsylvanian of Northwestern Illinois (abstract): by H. R. Wanless. Bulletin Geological Society America, vol. 38, No. 1, 1927.

1928

(To October 1, 1928)

Oil Prospecting in Western Illinois on the Basis of the Structure of Coal Beds: by A. H. Bell. Transactions Illinois State Academy of Science, vol. 20, pp. 293-296, 1928. (Joliet meeting, April, 1927.)

Pleistocene and Recent History of Alexis Quadrangle and Vicinity: by H. R. Wanless. Transactions Illinois State Academy of Science, vol. 20, 1928. (Joliet meeting, April, 1927.)

Karst Topography and Sanitary Engineering at Alton, Illinois: by J. E. Lamar. Transactions Illinois State Academy of Science, vol. 20, 1928. (Joliet meeting, April, 1927.)

Pre-Pennsylvanian Surface West of the Duquoin Anticline: by L. G. Henbest. Transactions Illinois State Academy of Science, vol. 20, 1928. (Joliet meeting, April, 1927.)

Molluscan Life of the Loess Deposits of Illinois: by F. C. Baker. Transactions Illinois State Academy of Science, vol. 20, 1928. (Joliet meeting, April, 1927.)

Geologic Interpretation of Anna City Well Pollution: by L. E. Workman. Illinois Engineer, vol. 4, No. 4, 1928.

Mineral Industries of Extreme Southern Illinois: by J. E. Lamar. Bulletin Associated State Engineering Societies, vol. 3, No. 2, Forty-third Annual Report Illinois Society of Engineers. April, 1928.

---

*Separate available upon request from the Chief, State Geological Survey, Urbana, Illinois.

*Fusulinellas from the Stonefort Limestone Member of the Tradewater Formation: by L. G. Henbest. Journal of Paleontology, vol. 2, No. 1, 1928.

Cretaceous, Tertiary, and Quaternary Formations of Extreme Southern Illinois (abstract): by J. E. Lamar. Bulletin Geological Society America, vol. 39, No. 1, 1928.

Significance of Igneous Pebbles and Boulders in an Upper Pennsylvanian Limestone in Illinois (abstract): by T. E. Savage and J. R. Griffin. Bulletin Geological Society America, vol. 39, No. 1, 1928.

Lake Illinois and the Question of Post-Early Wisconsin Deformation in Northern Illinois (abstract): by M. M. Leighton. Bulletin Geological Society America, vol. 39, No. 1, 1928.

Exposure showing late Sangamon Loess and early Peorian Loess with their Soil Zones (abstract): by M. M. Leighton. Bulletin Geological Society America, vol. 39, No. 1, 1928.

NOTICE

To Drillers, Operators, and Prospectors

The Survey must depend on logs of wells and test holes as a basis for its work on the geology of many parts of the State. It is, therefore, important that complete records of all drillings be sent to the Survey for study and permanent preservation in its files. On request, all such information will be held strictly confidential for as long a time as the owner may deem advisable.

Although the files at the present time contain some twelve thousand records, many logs have doubtless never been submitted. It is hoped that anyone possessing records not known to have been sent to the Survey, will mail them in now for filing.

Logs of new drillings should be sent in immediately on completion of the work to avoid danger of loss. It is recommended that the Survey be informed even before drilling begins, so that the operator may benefit by the information already in our log files and publications, as well as by advice which can be given as the work progresses. Such a course has in many cases saved large sums of money for individuals or organizations searching for coal, water, or oil.

A part of the duty of the Survey is to study drill cuttings or drill cores from Illinois, a service which may be of great help to both owner and driller, especially in regions which have not been thoroughly explored. Log books and sample sacks or core boxes for holding the cuttings or core, can be furnished without charge, and the cost of shipment is also paid by the Survey under ordinary circumstances.

For further information about this service, address:

M. M. Leighton, Chief,
State Geological Survey Division,
Urbana, Illinois.

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Explanation of Abbreviations

Agr. Exp. Sta.—Agricultural Experiment Station of the University of Illinois Bulletin.[1]
Amer. Ass. Ad. Sci.—American Association for the Advancement of Science.[2]
Amer. Ass. Pet. Geol.—Bulletin American Association of Petroleum Geologists.[2]
Amer. Geog. Soc.—Bulletin American Geographical Society.[2]
Amer. Inst. Min. and Met. Eng.—American Institute of Mining and Metallurgical Engineers.[2]
Amer. Jour. Sci.—American Journal of Science.[2]
Amer. Wat. Works Ass.—Journal of the American Water Works Association.[2]
Assoc. Eng. Socs.—Bulletin of the Associated State Engineering Societies.[2]
Base Map—Base map of the Illinois Geological Survey.[3]
Bl. Diamond—Black Diamond.[2]
Bot. Gaz.—Botanical Gazette.[2]
Bull.—Illinois Geological Survey Bulletin.[3]
Chgo. Univ. Con.—Chicago University, Walker Museum, Contribution.[2]
Econ. Geol.—Economic Geology.[2]
Educ. Ser.—Educational Series.[3]
Eng. Exp. Sta. Cir.—Engineering Experiment Station Circular.[6]
Eng. Exp. Sta. Bull.—Engineering Experiment Station Bulletin.[6]
Eng. Min. Jour.—Engineering and Mining Journal.[2]
Eng. News Rec.—Engineering News Record.[2]
Folio—United States Geological Survey Geologic Folio.[4]
Geog. Soc. Chicago—Geographical Society of Chicago Bulletin.[5]
Geol. Map—Geologic Map of the Illinois State Geological Survey.[3]
Geol. Soc. Amer.—Bulletin of the Geological Society of America.[2]
Ill. Acad. Sci.—Transactions Illinois State Academy of Science.[2]
Ill. Eng.—The Illinois Engineer.[2]
Ill. Geol. Sur. Mon.—Illinois Geological Survey Monograph.[3]
Ill. Jour. Com.—Illinois Journal of Commerce.[2]
Ill. Min. Inv.—Illinois Mining investigations Bulletin.[3]
Ill. Pet.—Illinois Petroleum.[3]
Ill. Soc. Eng.—Annual Report of the Illinois Society of Engineers.[2]
Jour. Geol.—Journal of Geology.[2]
Jour. Paleo.—Journal of Paleontology.[2]
Min. Eng. World—Mining and Engineering World.[2]
Min. Ind. Dir.—Mineral Industry Map and Directory.[3]
Min. and Sci. Press—Mining and Scientific Press.[2]
Oil and gas map—Oil and Gas Field Map of Illinois.[3]
Press Bulletins—Illinois Geological Survey Press Bulletins.[3]
Rpt. Inv.—Report of Investigations of the Illinois Geological Survey.[3]
U. S. Bur. Min. Bull.—United States Bureau of Mines Bulletin.[7]
U. S. Bur. Min. Tech. Paper—United States Bureau of Mines Technical Paper.[7]
U. S. Dept. Com. Ser. No.—United States Coast and Geodetic Survey, Department of Commerce Serial Number.[8]
U. S. Geol. Sur. An. Rpt.—United States Geological Survey Annual Report.[4]
U. S. Geol. Sur. Bull.—United States Geological Survey Bulletin.[4]
U. S. Geol. Sur. Mon.—United States Geological Survey Monograph.[4]
U. S. Geol. Sur. Prof. Pap.—United States Geological Survey Professional Paper.[4]
Univ. Ill. Bull.—University of Illinois Bulletin.[9]
Water Supply Paper—United States Geological Survey Water Supply Paper.[4]
West. Soc. Eng.—Journal of the Western Society of Engineers.[2]
Worthen Sur. Vol.—Worthen Geological Survey of Illinois Volume.[10]

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2 Available for reference in public, technical, or university libraries.
3 Obtainable from Illinois Geological Survey, Urbana, Illinois.
4 Obtainable from United States Geological Survey, Washington, D. C.
5 Obtainable from Geographical Society of Chicago, University of Chicago Press, Chicago, Illinois.
6 Obtainable from Engineering Experiment Station, Urbana, Illinois.
7 Obtainable from United States Bureau of Mines, Washington, D. C.
8 Obtainable from United States Department of Commerce, Washington, D. C.
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Soper and Osbon, Occurrence of peat in United States.....U. S. Geol. Sur. Bull. 728
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